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ABSTRACT

A summary of discussions on agenda items is presented in this report. Besides the financial, administrative, and constitutional aspects, the topics concentrate on long-term and expanded oceanic exploration programs, conduct and follow-up of cooperative investigations, legal problems in the scientific investigations of the oceans, and education and training in marine science. Proposals for global investigations of pollution in the marine environment are dealt with in connection with the cooperative study. The work group activities are examined in terms of the Tsunami warning system, oceanic data management, and monitoring marine pollution. Three lectures on matters concerning the Indian Ocean delivered in the session are reported. Included in the appendices are the abstracts of the lectures, a list of participants, two copies of opening addresses, the agenda, a list of the Member States, a summary of abbreviations and definitions, adopted resolutions, a summary report of the extraordinary session, and rationalization for the structure of the UNESCO oceanography organizations. (CC)

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Seventh Session

(Unesco, Paris, 26 October-5 November 1971)

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SUMMARY REPORT

Preamble

In 1960, the eleventh session of the General Conference of Unesco established the Intergovernmental Oceanographic Commission whose Statutes state, in part:

> "The purpose of the ... Commission shall be to promote scientific investigation with a view to learning more about the nature and resources of the oceans, through the concerted action of its members."

The efforts made by the Commission to carry out its mandate have grown in relation to the numbers of members of the IOC and the demands made upon the Commission by them. In 1960 the Commission had 40 members; as of July 1972, 72 Member States were actively participating in the IOC with Cameroon, Iraq, Malta, Mauritius, Portugal and Syrian Arab Republic having joined since 1970.

In view of the growing membership of the Commission and the increasingly important rôle which it was being asked to play in scientific marine research and related fields, the Unesco General Conference, at its sixteenth session in 1970, decided to amend the IOC Statutes in order to take further measures towards broadening the base of the Commission so that it might keep abreast of Member States' needs (Resolution 2.343). Thus, the Seventh Session of the Commission, which met from 26 October to 5 November 1971 at Unesco Headquarters, was the first held under the new Statutes.

This Summary Report includes a condensation of discussions on seventh session agenda items as well as ten annexes giving supplemental information.

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SUMMARY REPORT

I. OPENING OF THE SESSION

The Intergovernmental Oceanographic Commission met for its seventh session in Paris, at Unesco Headquarters, from 26 October to 5 November 1971. The session was opened by the Chairman, Rear-Admiral W. Langeraar, who greeted the delegates, representatives and observers. Fifty of the Commission's 72 Member States were represented, and a list of participants who attended the session is given in Annex I.

The Director-General of Unesco, Mr. René Maheu, addressed the participants (Annex II). The Chairman responded (Annex III), and in doing so named and welcomed new members of the Commission: Iraq, Malta, Mauritius, Portugal, Syrian Arab Republic. (See Annex IV for list of Member States.)

The deaths of a number of well-known marine scientists in the period between the sixth and seventh sessions were announced: Dr. V. G. Bogorov (USSR), Dr. W. M. Chapman (United States of America), Sir Archibald Day (United Kingdom), Dr. Columbus Iselin (United States of America), Dr. M. B. Schaefer (United States of America), Dr. J. Strickland (United States of America), Dr. Gunnar Thorson (Denmark), Mr. W. S. Wimpenny (United Kingdom), and Academician L. A. Zenkevitch (USSR).

Several delegates requested that statements be recorded in the Summary Report concerning representation and participation at the session.

The head of the Romanian delegation, referring to questions of representation at, and participation in, the present session, stated that his government considered the only legitimate representative of the Chinese people to be the Government of the People's Republic of China. The Romanian Government also considered that the sole legitimate representative of the people of South Viet-Nam was the Provisional Revolutionary Government of South Viet-Nam. The Romanian delegate further regretted the absence from the proceedings of States such as the German Democratic Republic, the Democratic Republic of Viet-Nam and the People's Democratic Republic of Korea.

The delegation of the Republic of Korea believed that the Member States of the Commission are called to abide by the Statutes of the Commission in the conduct of its business. Therefore, any attempts and/or statements that overrode the present Statutes should be discouraged, if not prohibited, if the Commission was to achieve its objectives with orderliness. Furthermore, it should be borne in mind that the Commission had not met in this instance to bring into its membership any nation which had constantly refused to become favourably disposed towards collaborative scientific undertakings among nations.

The delegate of the Republic of Viet-Nam declared that the only legitimate representative of the people of South Viet-Nam was the Government of the Republic of Viet-Nam. The organization which called itself "The Provisional Revolutionary Government", having neither territory, capital city nor public services, had no effective existence and represented at the very best only an infinitesimal minority of the population of South Viet-Nam.

The Director-General of Unesco informed the meeting that the question of the representation of China in Unesco was being considered by the Executive Board, then in session. Subsequently, the decision of the Board was made known, as embodied in its 88 EX/Decision, 9.

II. ADOPTION OF THE AGENDA

References: SC/IOC-VII/1 — Provisional Agenda
SC/IOC-VII/2 and Add. 1 — Annotated Provisional Agenda

After due consideration, and taking into account proposals by the representatives of the Federal Republic of Germany, Israel and the United States of America and a correction by the Secretariat, the Agenda given in Annex V was adopted.

III. REVIEW OF WORK ACCOMPLISHED BETWEEN THE SIXTH AND SEVENTH SESSIONS

References: SC/IOC-VII/3
SC/IOC-VII/4
SC/IOC-VII/5
SC/IOC-VII/7
SC/IOC-VII/8
SC/IOC-VII/9
SC/IOC-VII/13 and Addenda
SC/IOC-VII/37

Item 3.1 - The Secretary introduced his report (document SC/IOC-VII/9), calling attention to the further increase in several indices of work accomplished - the numbers of meetings convened, communications with members, documents prepared, and so on. He drew attention to the establishment of a joint secretariat for the Commission, with staff from FAO(1) and WMO, as well as an augmented number from Unesco; and to the fact that as many of the Commission's meetings were now being convened at the headquarters of other agencies - and mainly at their expense - as at Unesco. He noted that while the necessary formal actions had been taken on resolutions of the Commission and Recommendations of its Bureau and Consultative Council, the staff had not been adequate to prepare and follow up meetings to their satisfaction; this had contributed to the time-lag in publications. He further observed that Member States had apparently often had difficulty in taking concrete action called for by decisions of the Commission, as had also been reported to the sixth session. Nevertheless, thanks to the co-operative will of members, to the efforts of his colleagues in the Secretariat, to the contribution made by the professional services of Unesco and other organizations of the United Nations system which were supporting the Commission, and to the great encouragement and help given by the Chairman and by the officers of subsidiary bodies, a great deal had been accomplished during these critical two years.

Item 3.2 - The Commission accepted the Summary Reports of the 11th and 12th meetings of the Bureau with the Consultative Council and in doing so noted that the Recommendations made therein were directed to implementation of resolutions of the sixth session or to the present session, in which case they would be taken into account under relevant items of the Agenda. The two Recommendations of the 13th meeting, pertaining to Agenda items 5 and 13, were noted for consideration under those items.

Item 3.3 - The Secretary reviewed, with reference to his report, the status of implementation of resolutions of the sixth session. Under this Agenda item, a number of representatives made general statements concerning their national marine research programmes and plans, and how these related to the work of the Commission; others gave their views on the rôle of the Commission and the orientation of its activities. In this debate, representatives of Argentina, Brazil, Chile, Colombia, Finland, France, Federal Republic of Germany, Japan, Romania, United Kingdom, United States of America and USSR participated. Several referred to the growth in membership of the Commission, to the need for broad national participation in the Commission's activities, and to the help needed for effective participation by many of the developing countries. A number of delegates observed that, thanks to Unesco and also to some other organizations of the United Nations system, the staff and funds available to the Commission had grown, that a period of organizational evolution had been passed and that now the Commission should devote itself as much as possible to practical action in promoting the investigation of the ocean. Overlapping and duplication of work undertaken by other bodies were to be avoided. Others stressed the urgent need to establish priorities for international co-operative efforts, and the fact that responsibility for success lay essentially with the Member States themselves. One delegation hoped that the Secretariat might in future be able to produce short reports on each type of activity, which both summarized and evaluated the work of the subsidiary bodies. Another emphasized the need for adequate arrangements for full and rapid promulgation of information about national research programmes, especially of cruises by research vessels.

Item 3.4 - Following a brief introduction of this item by the Secretary, the President of SCOR, the Chairman of ACMRR and the Secretary of ACOMR referred to the work of their committees, with particular reference to their advice on matters to be discussed under Agenda items 6, 8.9 and 9.3. In the same context, the Secretary, in his capacity as Unesco Technical Secretary for GESAMP, referred to the work of that Joint Group. He then informed the session of the application of ECOR to

(1) See Annex VI for list of acronyms used in this Summary Report.

be recognized as an advisory body to the Commission, and referred delegates to Resolution VI-20, and to the Statutes and position paper of ECOR which had been distributed. With regard to ECOR the Commission considered the need for consultation with a further non-governmental body and whether ECOR was so structured as to be helpful to the Commission. A positive position was taken with respect to both questions, and the Commission adopted Resolution VII-1(1).

The Commission considered the question of the convening of future Joint Oceanographic Assemblies, and in this connexion adopted Resolution VII-2.

The Commission expressed its thanks to the Scientific Advisory Bodies, especially for the reports and comments pertaining to the GELTSPAP report and to the GARP Atlantic Tropical Experiment. It stressed the strengthening of the relationship between ACOMR and physical oceanographers, and subsequently, from consideration of this question under Agenda items 6 and 8.9.2, adopted Resolution VII-3.

IV. CONSIDERATION OF IMPLICATIONS FOR THE COMMISSION OF RELEVANT RESOLUTIONS ADOPTED DURING THE 24TH AND 25TH GENERAL ASSEMBLIES OF THE UNITED NATIONS AND THE SIXTEENTH SESSION OF THE GENERAL CONFERENCE OF UNESCO

References: SC/IOC-VII/10
SC/IOC-VII/12
SC/IOC-VII/14
SC/IOC-VII/27
SC/IOC-VII/34
SC/IOC-VII/43 Add. 1
SC/IOC-VII/INF-176
SC/IOC-VII/INF-178

The representative of the United Nations reviewed the pertinent resolutions and actions of the United Nations General Assembly and the Economic and Social Council during the intersessional period; these pertained particularly to the preparations for a new conference on the law of the sea, and for the Conference on the Human Environment, and the progress of LEPOR. Questions arising from these were subsequently taken up by the Commission also under Agenda items 10, 8.9.1 and 9.3 and 6 respectively. The Commission noted the continuing and growing interest of the United Nations in marine problems, and the recognition, in United Nations decisions, of the important rôle of the Commission in relation to the scientific aspects of these. In this connexion the Commission adopted Resolution VII-4.

The Secretary then reviewed the decisions of the sixteenth session of the General Conference of Unesco by which amended Statutes of the Commission had been adopted, and the Director-General of Unesco had been authorized to provide augmented secretariat services and support to the Commission, to undertake other activities relating to the work of the Commission, including the convening of a Preparatory Conference on the Legal Status of ODAS, and to promote and assist specialized education and training in marine science. These matters were taken up again under Agenda items 7, 10 and 11.

V. ESTABLISHMENT OF SESSION COMMITTEES and ORGANIZATION OF WORK OF THE SESSION

References: SC/IOC-VII/37

The Commission adopted the recommendation of the Bureau with the Consultative Council to establish four session committees, and to assign agenda items to them as follows:

		Chairman	Agenda items
SC.I	Scientific research activities	Professor Dr. H.U. Roll (Federal Republic of Germany)	3.4, 6, 8, 12
SC.II	Operational services	Lt. Cdr. D.P.D. Scott (United Kingdom)	9
SC.III	Administrative and legal matters	Miss M.A. Martin-Sané (France)	4, 7, 10, 13, 14
SC.IV	Education, training and mutual assistance	Capt. O.A. Amaral Affonso (Vice-Chairman, IOC)	11

The Chairman gave the Committees a set of general guidelines.

(1) Resolutions as adopted by the Seventh Session are attached as Annex VII.

When it first convened, each Committee appointed a rapporteur from among the delegations, who worked with the Secretariat in preparing their reports, which formed the basis for the present Summary Report. Professor Morelli, Vice-Chairman, was assigned to control the schedule of meetings of the session committees, of the Steering Committee and of ad hoc groups throughout the session. Generally, two session committees met simultaneously (and also the representatives of Members participating in the CICAR had a special meeting to discuss matters arising from the report of the fourth session of the ICG for CICAR). The reports of the Committees were distributed as session documents, and their substance subsequently condensed and assimilated into this Summary Report.

VI. LONG-TERM AND EXPANDED PROGRAMME OF OCEANIC EXPLORATION AND RESEARCH WITH EMPHASIS ON THE INTERNATIONAL DECADE OF OCEAN EXPLORATION AS THE ACCELERATION PHASE(INCLUDING ARRANGEMENTS FOR ITS FUTURE DEVELOPMENT AND CO-ORDINATION)

References: SC/IOC-VII/9
SC/IOC-VII/11 and Addenda
SC/IOC-VII/12
SC/IOC-VII/13 and Addenda

Representatives of fifteen Members (Argentina, Brazil, Canada, Chile, Ecuador, France, Federal Republic of Germany, Israel, Japan, Mexico, Netherlands, Norway, Portugal, USA, USSR), the observer from Kenya, and the Chairman of GELTSPAP (Dr. C. E. Lucas) took the floor in a general debate on this item which was then referred to Session Committee I. Some Members, notably the USA, were basing their planning on the concept of the International Decade of Ocean Exploration as an acceleration phase of LEPOR, others were relating their programme to different time periods, but all agreed that success would depend mainly on the scope of national efforts and on the selection of priorities and criteria for international action. Criteria would need to be applied flexibly, and other international bodies both within and outside the UN System would need to be fully involved. Again, the importance of helping the less developed states to participate on an equitable basis was stressed, and in this connexion the relative priority to be assigned to the proposed Global Investigation of Pollution in the Marine Environment (GIPME) was mentioned (see section VIII, Agenda item 8.9.1).

With regard to the publication of the contents of the report of GELTSPAP, the Commission decided, on the basis of suggestions by Session Committee I, that the Secretary should arrange for preparation of an appropriate text, incorporating new documents, and comments submitted, for consideration by the first session of the Executive Council with a view to subsequent wide distribution as a Commission publication (Resolution VII-5).

The criteria (questions) proposed by GELTSPAP were reviewed at length. Some delegates wished greater weight to be given to certain questions, and some to other questions. There were numerous suggestions both for shortening and elaborating the list of questions. Eventually agreement was reached on the reduced list of eight questions given in the second operative paragraph of Resolution VII-6 which was adopted. Several representatives expressed the hope, nevertheless, that other questions proposed by GELTSPAP would not be overlooked.

Having, by Resolution VII-6, approved the report of GELTSPAP as the basis for future planning and implementation of LEPOR, the Commission also established, by Resolution VII-7, dates and procedures for the International Decade of Ocean Exploration as the "acceleration phase" of the LEPOR.

The Commission proceeded to apply, in a general way, the selection criteria for new projects it had approved. Considering the scientific significance of some of the proposals made by GELTSPAP, and the interests of Members in them, the Commission adopted eight new co-operative exercises, by its Resolution VII-8. Three of these, involving geological and geophysical investigations were the subject of Resolution VII-9 whereby arrangements were made for the refinement of priorities in the light of advice from SCOR.

Three specific proposals by GELTSPAP were the subject of special consideration. Decision taken with respect to the Global Investigation of Pollution in the Marine Environment are reported in Section VIII of this Report; the Secretariat was instructed by Resolution VII-10 to further explore and report on the proposed International Institute of Physical Oceanography; and the arrangements

were made, under Resolution VII-11 for continued development of the plan for an Integrated Information System on Aquatic (Marine) Sciences. Within this system the periodical "International Marine Science" had a key rôle. It should be revived and revised, prepared collaboratively by the ICSPRO organizations and issued as from 1972 by Unesco as a regular bulletin of the Commission (Resolution VII-12).

Finally, under this item of the Agenda, the Commission adopted Resolution VII-13, addressed to Members, the Executive Council, and the Secretariat, calling for more energetic execution of adopted projects, for accelerated oceanic research, and for more effective measures of various kinds.

VII. FINANCIAL, ADMINISTRATIVE AND CONSTITUTIONAL ASPECTS OF THE COMMISSION'S ACTIVITIES

References: SC/IOC-VII/15
SC/IOC-VII/16
SC/IOC-VII/17
SC/IOC-VII/9
SC/IOC-VII/43
SC/IOC-VII/44 - Add. 1

Item 7. 1 - The Commission considered the report of the second session of its Ad Hoc Group of Governmental Experts to Draft New Rules of Procedure which had met immediately prior to the session in accordance with Recommendation 13. 3 of the Bureau with the Consultative Council. The Ad Hoc Group had examined a document prepared by the Secretariat and which took into account matters of substance contained in comments received on the draft new rules prepared at the first session of the Group. A second draft of the new rules, together with certain comments by some of the governmental experts, was submitted by the Group.

This draft was approved by Session Committee III with minor changes unanimously agreed upon, except for divergences of views on certain provisions in Articles 24, 27, 28, 35, 36 and 47 and which are set out in the report of that Committee. For the plenary discussion of the second draft rules, as amended by votes in the Session Committee, it was agreed to consider formally the English language version, some linguistic discrepancies having been noticed by representatives in the other versions. It was agreed to convey this amended draft to the following Extraordinary Assembly, with a recommendation for their adoption, by Resolution VII-14, it being understood that any reservations by Members regarding the draft would be communicated to the Secretariat and included in this Summary Report. To date, no such reservation had been communicated.

Item 7. 2 - The Commission examined the Chairman's suggestions on this matter contained in document SC/IOC-VII/16, and noted the Secretary's observations on these. Representatives of ten Member States (Australia, Brazil, Canada, France, Federal Republic of Germany, India, Mexico, United Kingdom, USA, USSR), the Assistant Director-General for Science of Unesco, the representative of FAO, and the observer for SCOR, took part in a general exchange of views, during which the following questions were posed, and in some cases, contrasting views expressed:

1. Whether there was a need for Standing Committees;
2. If Standing Committees were established, whether the allocations of tasks to the first and the second of them should be according to the Chairman's suggestion, or closer to the allocations that had been made to Session Committees I and II;
3. Whether Standing Committees should elect their own chairmen or whether the Vice-Chairmen of the Commission should serve as Committee Chairmen;
4. Whether ways could be found for certain committees to report directly or indirectly also to other organizations to ensure prompt action by them;
5. Whether and to what extent, the expansion of the Commission's responsibilities and activities really requires a radically new structure;
6. Whether administrative, legal, financial, and procedural matters should be the responsibility of a Standing Committee, or the Executive Council itself, which might set up ad hoc subsidiaries, as necessary;

7. Whether it was necessary to h. tanding Committee on Education, Training and Mutual Assistance;

8. How to ensure that persons having authority to commit research facilities, such as laboratory directors, participate actively in subsidiary bodies dealing with scientific and technical matters.

After various suggestions had been made as to a means of resolving these questions, it was agreed that a small group should be invited to work with the Chairman to prepare a revised proposal. This group consisted of representatives of the three scientific advisory bodies, the Chairman of GESAMP, and the Secretary-General of ICES, and they were assisted by the Secretary. They, with the Chairman, prepared a proposal which was submitted to Session Committee III as document SC/IOC-VII/INF. 179.

Discussion of this proposal, and of the superseding one submitted by the delegation of the USA (document SC/IOC-VII/INF. 181), in the Committee was controversial. Eventually an indicative vote showed that 14 delegations favoured the establishment of three Standing Committees (one of these favourable votes being conditional upon there being a consequent reduction in the total number of subsidiary bodies). Others opposed, or favoured four Standing Committees, or wished the whole matter adjourned. Eventually the Commission adopted Resolution VII-15 calling upon the Chairman and Secretary to prepare and circulate a further study taking account of the draft resolution given in the Annex to Resolution VII-15 and the relevant discussions and votes.

Item 7. 3 - Budget and Staff for 1973-74

Discussion of this item revealed that while the support by other interested Agencies to the IOC would likely increase, the Commission would be able to fulfil its obligations and meet the wishes of Member States only if Unesco gave within its programme an effective, real priority for oceanography. The Commission accordingly adopted Resolution VII-16 addressed primarily to the Director-General of Unesco, and also to the Executive Heads of other organizations concerned and Member States participating in the 17th General Conference of Unesco and in forthcoming meetings of governing bodies of the other organizations.

Resolution VII-22; adopted under item 8. 9. 1, is pertinent also to this item.

Item 7. 4 - Secretariat Services to the Commission

After an informal exchange of views in plenary session, this item was discussed in Committee III with the participation of the Deputy Director-General of Unesco and the Assistant Director-General for Science.

Most of the delegates felt that it was appropriate for the Commission to express its views on the total oceanographic programme of Unesco, and all agreed this programme needed improved and enlarged supporting services.

There was general agreement on the urgent need to strengthen the IOC Secretariat. Some delegates felt strongly that the IOC Secretariat and the Office of Oceanography must remain organically linked under a single head, while others equally favoured distinct identification of a complete staff structure for each. A corresponding divergence of views existed on the possibility of locating the IOC Secretariat elsewhere than in Unesco Headquarters, although all agreed that the implications of a move out of Paris had been inadequately studied so far.

Several draft resolutions were tabled and considered, and an ad hoc group consisting of delegates of Norway, Federal Republic of Germany, United Kingdom, and Arab Republic of Egypt, was invited to prepare a compromise resolution based on the results of polls of opinion taken in the Session Committee. Subsequently, the Commission adopted the operative paragraphs of the draft of Resolution VII-17 (document DR. P5) by a roll call vote with 26 votes in favour, 13 against and one abstention. The voting was as follows:

In favour	Against	Abstention
Australia	Argentina	Belgium
Canada	Brazil	
Arab Republic of Egypt	Bulgaria	
Finland	Chile	
France	Colombia	
Federal Republic of Germany	Ecuador	
Iceland	Iraq	
India	Poland	
Israel	Romania	
Italy	Ukrainian SSR	
Japan	USSR	
Korea	Uruguay	
Mexico	Venezuela	
Monaco		
Netherlands		
New Zealand		
Norway		
Philippines		
Portugal		
South Africa		
Spain		
Switzerland		
Thailand		
United Kingdom		
United States of America		
Yugoslavia		

The resolution was subsequently adopted as a whole by vote, 20 in favour, 11 against and 6 abstentions. The resolution requests the Director-General of Unesco to re-organize the Secretariat of the Commission and the Unesco Office of Oceanography as separate entities with the former reporting to him, and requests and lays down arrangements for preparation of [illegible]ction upon studies of ways and means of increasing the size and efficiency of the Secretariat, including the implications of a possible change in its location.

In accordance with a request by the representative of the USSR, the alternative approach to this whole question contained in document DR. P1 is annexed to this Summary Report (Annex VIII). The Soviet delegation stated that, in their opinion, the question of separation of the IOC Secretariat and the Office of Oceanography was of the utmost importance for the future of the Commission. It therefore considered that in view of the lack of unanimity among IOC Member States, the greatest care should be exercised in regard to the future structure of the IOC Secretariat.

VIII. PLANNING, CONDUCT AND FOLLOW-UP OF CO-OPERATIVE INVESTIGATIONS

The various sub-items of this Agenda item were considered by Session Committee I. and its report on them subsequently accepted by plenary. No specific action was taken on items 8. 1 and 8. 2 beyond noting the urgent need to bring the publication of the IIOE and ICITA Atlases to a successful conclusion. The accomplishments and status of the Co-operative Study of the Kuroshio and Adjacent Regions (CSK) were reviewed under item 8. 3, and the reports of the ICG accepted. With respect to CICAR (item 8. 4), discussion centered on the completion of the report of the fourth session of the ICG during an Extraordinary Session held on 2 November 1971 in Paris (see Annex IX), and specifically on the question of extending the period of CICAR and providing for continued co-operation in that region. In this connexion, the Commission adopted Resolution VII-18 directed to the ICG and to the Secretariat.

There had, during the intersessional period, been a number of inter-secretariat and consultants' meetings concerning Co-operative Investigations of the Mediterranean (CIM) (item 8. 5). The International Co-ordinator for CIM expressed dismay at the rate of progress in implementing this one of the Commission's co-operative exercises within LEPOR. After a thorough discussion of the ways and means of improving the situation, the Commission decided to request participating countries to

appoint National Co-ordinators, and to arrange that they meet with the International Co-ordinator and the Assistant International Co-ordinators; accordingly Resolution VII-19 was adopted.

Better progress was acknowledged with Co-operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA) (item 8.6), and through adoption of Resolution VII-20 the Commission took specific action regarding the synoptic Sea Surface Temperature Project at Casablanca.

Although the Commission took no specific action in plenary regarding item 8.7 (Southern Ocean), there was extensive discussion in Session Committee I. There it was reported that the draft report of the first session of the Working Group (November 1971) had not yet been adopted by the participants. At that meeting, the problem of co-operative efforts in remote areas and the possibility of ships of opportunity doing buoy and gauge tending were discussed. A SCOR/SCAR working group had been established (see Volume 7 of the SCOR Proceedings).

The representative of Argentina reiterated Argentina's invitation to host the second session of the International Co-ordination Group. He said that his offer, made in a spirit of international co-operation, applied to any Southern Ocean meeting that it is deemed necessary, desirable, and convenient to hold. The representative of Australia said that his country would not support any Working Group session until matters from the first session had been dealt with and the SCOR/SCAR terms of reference changed to incorporate the carefully worked out terms of reference given by the Working Group. The representative of South Africa supported the representative of Australia with special reference to the need for cruise plans one year in advance. The President of SCOR noted that the SCOR/SCAR group was using terms of reference which they considered to be the most useful, and was hesitant to accept other terms. The representative of USSR suggested SCOR be asked to prepare recommendations on the scientific programme to be carried out in the Southern Ocean and present these to the second meeting of the Working Group with a view to adopting them. A resolution was accordingly drafted. It was not, however, adopted, it being agreed instead to insert the substance of it in this report.

The Federal Republic of Germany favoured, in principle, the proposed co-operative investigations within the framework of the IOC.

After a discussion in Session Committee I of the controversial question of the division of the southern polar waters into two regions, it was agreed that the ICG should again take up this matter and resolve it at its second session.

The Assistant Secretary reported on the history of discussion of the North Atlantic Investigations (item 8.8), and referred to the IOC/ICES/ICNAF Inter-secretariat consultations, the reports on which had been made available. After a discussion in Session Committee I to which the main contributors were representatives of Denmark, Federal Republic of Germany, USSR and the observer from ICES, the Commission adopted Resolution VII-21 regarding the continuation of the inter-secretariat consultations, and periodic meetings between that Group and officers of related Inter-governmental co-ordination groups and subsidiary bodies.

Item 8.9.1 - Global Investigations of Pollution in the Marine Environment (GIPME)

This new proposal by GELTSPAP was considered by Session Committee I and by plenary as a matter of high priority as agreed under item 6, and embodied in Resolution VII-8. The basis for discussion was the valuable report submitted by the ACMRR/SCOR/ACOMR/GESAMP Joint Working Party on GIPME. Particular attention was given to the organizational and staff and financial needs for detailed planning and co-ordination of such a project, which were considerable. Resolution VII-22 was adopted in this connexion, with the object of encouraging and assisting the submission of a request for assistance by the organizations whose Executive Heads participate in ICSPRO to the United Nations Conference on the Human Environment (Stockholm 1972). By this resolution also the Executive Council is enabled to establish an appropriate ICG for GIPME. These decisions should be viewed in the context of proposals concerning marine pollution monitoring embodied in Resolution VII-27 (see Report under item 9).

Other new proposals arising from GELTSPAP (item 8.9.3) were dealt with under item 6. It was agreed that the question of Ice Research and Polar Oceanography (GELTSPAP Report, para. 34) was covered by Resolution VII-8. Under this sub-item, Session Committee I discussed at length

the work of the Group of Experts on Oceanographic Research as it relates to IGOSS, but no specific actions were proposed or taken by the Commission as a whole.

Under sub-item 8. 9. 3, New Proposals by Member States, the representative of the USSR referred to the POLEX experiment embarked upon by his country, and the observer from ICES drew attention to the 1973 Overflow Expedition planned by ICES.

IX. JOINT OPERATIONAL ACTIVITIES

The whole of this item was considered by Session Committee II, whose report on it was accepted by the plenary.

Item 9. 1 - IGOSS and Activities of related Groups of Experts

The Chairman of the Working Committee for IGOSS reviewed the progress made during the past two years and presented a document on the subject prepared in collaboration with the Chairman of the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs (SC/IOC-VII/44). He noted specifically the important contributions to the operational phase of IGOSS of having developed new codes for the transmission of ocean data and the development of manuals on data acquisition and on archiving and storage of IGOSS data. Implementation of IGOSS, in the form of a Pilot Project, was now the most important task facing the Member States and the Working Committee.

This theme was reiterated by many delegates and the Commission endorsed in principle the present plan to implement the Pilot Project early in 1972. The Chairman of the Working Committee anticipated that the responses to IOC Circular Letter 325 would allow an implementation plan to be developed but that at the time of this meeting further replies were needed, as many Members had not replied to date. The success of the Pilot Project and, in the same regard, the IGOSS programme, depends upon total participation by Member States.

The delegate of France stated that the study of the Bay of Gascogne of dynamics which was leading to the development of prediction models, corresponded to a regional project and could aid the Pilot Project.

The delegate of the Federal Republic of Germany indicated that the CINECA programme provides an opportunity for implementing an initial IGOSS service in support of those investigations.

The Chairman of the Working Committee introduced the question of the rôle of the Commission in pollution monitoring and its connexion with the IGOSS programme. If the Commission accepted such responsibility, it should become a function of IGOSS but on the other hand, if the decision is not to accept pollution monitoring responsibilities, its rôle in providing any responsive service through IGOSS should be re-evaluated. The Session Committee considered on the other hand that whereas physical and some chemical properties can be considered to be covered by IGOSS, the position regarding other chemical and biological aspects which form a wider part of the responsibilities for services by the Commission cannot yet be defined.

The Chairman of the Group of Experts on Oceanographic Research as it relates to IGOSS described that Group's activities in ocean modelling, network design, and studies of patchiness in the Biota, pollution monitoring in IGOSS and pilot studies. He indicated that the Pilot Project would provide a focus for the Group which previously felt that the nature of the problems facing it were too broad in scope.

The value of IGOSS was emphasized by several delegates and by the representatives of WMO and ACMRR. In particular, it was mentioned that IGOSS, when implemented, would be beneficial to ocean research programmes, developing countries, and improve application of data to fisheries, flood warning, long-term ocean prediction, and other ocean activities.

The WMO representative referred to the decisions taken by the WMO Sixth Congress (April 1971) in respect to ocean affairs in general and to IGOSS and marine pollution in particular (general summary of the Report; and Resolution 11 (CG. VI)); the Congress had inter alia "encouraged continuing joint action between the IOC and WMO in all activities related to the planning and implementation of

IGOSS". In the view of the WMO representative, the marine meteorological systems and services operated by WMO constituted one link between IGOSS and the World Weather Watch.

The Commission discussed the IGOSS time-table (SC/IOC-VII/29, Annex IX) as accepted in principle by the Working Committee for IGOSS and the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs. The Chairman of the Working Committee stressed that the Commission could only hold to this time-table if Member States provided sufficient funds and effort, and also that the results of the Pilot Project would certainly influence the proposed time-table.

The Commission endorsed the new structure of subsidiary bodies which had been introduced by the Working Committee, including the formation of a Joint IOC/WMO Planning Group for IGOSS which is intended to act as a small steering committee for IGOSS; a Joint IOC/WMO Group of Experts on IGOSS Technical Systems Design and Development and Service Requirements (to replace the Joint IOC/WMO Group of Experts on Co-ordination of Requirements) and the Group of Experts on Oceanographic Research as it relates to IGOSS (to replace the Group of Experts on Ocean Variability).

Following discussion of Recommendation 12.13 of the Bureau and Consultative Council, the Commission recommended that the selection of the three new members for the Group of Experts on Oceanographic Research as it relates to IGOSS be made by the Chairman of that Group in consultation with the Secretary, recognizing the principle of geographical distribution.

The representative of WMO drew attention to decisions on IGOSS adopted by WMO. At its sixth session for example, the Congress of WMO adopted Resolution XI which encouraged continuing joint action between IOC and WMO in all activities relating to the planning and implementation of IGOSS. Also at its sixth session the WMO Congress deputed its Technical Commission for Marine Meteorology to be the appropriate WMO commission to assist in the development of IGOSS. At its pending sixth session in 1972, the Commission for Marine Meteorology will probably consider the Congress directive as well as appropriate resolutions adopted by IOC.

Oceanographic participation in the GARP Atlantic Tropical Experiment (GATE) was discussed but, as the only likely oceanographic input was by scientists taking part in specific research projects, this item was referred to Session Committee I for necessary action.

Resolutions VII-23 and VII-24 were accordingly adopted.

Item 9.2 - Oceanic Data Management

The Secretary introduced SC/IOC-VII/31 and 32, the reports of the fifth and sixth sessions of the Working Group on International Oceanographic Data Exchange. The Group had been working very effectively with various task teams and the ad hoc groups carrying out their duties by correspondence. The Commission considered recommendation III of the sixth session of the Working Group (SC/IOC-VII/32) and noted that the Secretary had approached IAEA, ICES, IHO, FAO and WHO to obtain their views on the setting up of a task team on interdisciplinary exchange of data; replies to date have been generally favourable. However, WMO had raised a number of questions pertaining to procedural matters, particularly with regard to the reporting procedure to be followed by the Joint Task Team.

It was decided to adopt the ROSCOP inventory reporting form to facilitate the exchange of marine data but with the reservation that the present form would be an interim one; it was noted that this form is already under revision and will, in the future, be kept under continuing review by the Working Group on International Oceanographic Data Exchange. A task team is already working on new sections of the ROSCOP which will be related to biology and pollution. A similar form (SC/IOC-VII/32 Add. 1) was submitted to the meeting by the USSR delegate; it was decided to forward the form to the Data Exchange Working Group for its consideration.

It was noted that three separate manuals on oceanographic data acquisition and exchange are either under revision or in preparation. These are the Comité International de Géophysique (CIG)/ICSU guide to "International Data Exchange through WDC's"; the IOC "Manual on International Data Exchange"; and the IGOSS manuals, in particular the manual on non-real-time data exchange a and storage. The IGOSS and IOC manuals are being closely co-ordinated, and the representative of WDC 'A' stated that the oceanographic section of the CIG/(ICSU) manual would not be taken in hand

until the new edition of the IOC Manual had been completed and approved, and he would attempt to ensure that the two were compatible.

The representative from WMO, Mr. S. L. Tierney, described the Technical Conference on the Means of Acquisition and Communication of Ocean Data for which he is the Technical Director. He pointed out that although the Conference was to deal with acquisition and communication of oceanic data required for meteorological purposes, its scope was sufficiently broad to justify active participation by the Commission and other organizations concerned with marine activities. Consequently, the Commission has reacted positively to the invitation of WMO to nominate an expert as a member of the planning committee of the Conference and as chairman for one of the conference subject sections; this will be Mr. J. Snodgrass, Chairman of the Joint IOC/WMO Group of Experts on Telecommunication.

The conference will be held immediately before the sixth session of the WMO Commission for Marine Meteorology in October 1972. It was noted that there will be an exhibition of equipment produced by industry at the conference.

The Commission recommended that should the necessity arise, assistance should be given where the need is paramount, to one or two oceanographers to attend the meeting to present papers.

Resolutions VII-25 and VII-26 were accordingly adopted.

Item 9.3 - Monitoring Marine Pollution

The Commission discussed monitoring of pollutants and concluded that the Commission should accept responsibility for co-ordination of any pollution monitoring programmes considered feasible and desirable. The representative from SCOR emphasized that if such programmes are to be co-ordinated by the Commission, they must be founded on a firm scientific basis which in this case would result from the GIPME. It was generally agreed that baseline studies would have to be completed before any monitoring programme could be instituted and it was noted that intercalibration of techniques would be vital. The relationship of IGOSS to any pollution monitoring programme was discussed; it was considered that the International Working Group for GIPME should establish what part of such programmes should be covered by IGOSS.

Several delegates expressed the view that pollution research and monitoring would best be done on a regional basis with IOC co-ordinating the work. The representative from ICES stated that his organization was prepared to carry out baseline studies in its area and also undertake a pollution monitoring programme.

Resolution VII-27 was accordingly adopted.

Item 9.4 - Future Arrangements for Co-ordinating such Activities

This item had been adequately covered under previous Agenda items.

Item 9.5 - Tsunami Warning System in the Pacific

Document SC/IOC-VII/26 was introduced by the Assistant Secretary, Dr. G. Giermann, who had attended the second session of the ICG on Tsunami Warning System in the Pacific as the Unesco/IOC representative. Membership in the ICG had increased from 6 in 1968 to 13 at present, and the trend is to improve the capabilities of the system.

Chile reported some difficulty with their internal communication arrangements and asked if funds were available for provision of equipment. It was suggested that the matter should be raised at the next session of the Tsunami Warning System ICG and that the most likely source of funds for this purpose would be the UNDP.

Some discussion ensued on the use of H. F. bands for the Tsunami Warning System, for use from ODAS anchored in the open ocean. It was decided that this problem should be referred to the Joint WMO/IOC Group of Experts on Telecommunication and that the ICG recommendation that a representative of the ICG should attend the next meeting of the Group of Experts should be supported.

Resolution VII-28 was adopted.

X. LEGAL ASPECTS OF SCIENTIFIC INVESTIGATIONS OF THE OCEANS

Item 10. 1 - Ocean Data Acquisition Systems (ODAS)

The Commission noted the actions taken by Unesco and IMCO regarding this matter and, in adopting Resolution VII-29 which had been drafted by Session Committee III, took a number of actions to ensure that the draft convention prepared by its Group of Experts was transmitted to the Joint Unesco/IMCO Preparatory Conference on the Legal Status of Ocean Data Acquisition Systems (ODAS); that the IOC Secretariat supported the Preparatory Conference; and that the Group was now dissolved. Through this resolution the Commission also expressed its concern as to the allocation and sources of funds for the Preparatory Conference, believing that as the Unesco General Conference had decided, on the basis of the Director-General's proposal that the Agencies themselves, rather than the IOC, should convene the Conference, the necessary funds should not be taken, as the documents indicated, from the 1972 IOC budget.

Following the adoption of Resolution VII-29, the representative of Argentina requested that the following statement be inserted in the Summary Report.

> "The delegation of Argentina was unable to participate in the plenary session on 4 November 1971 due to the inaugural celebrations of the 25th Anniversary of Unesco and the simultaneous meeting of the Selection Committee, and requested to be put on record its disagreement with the incorporation of the last paragraph of Resolution VII-29, because such a paragraph referred to funds already assigned by the General Conference of Unesco to specific activities aimed principally to provide help to developing countries. "

Item 10. 2 - Legal Questions related to Scientific Investigations of the Ocean

Under this item, again on the basis of discussions in Session Committee III, the Commission confirmed the actions it had taken at its sixth session, approved provisional guidelines for the application of Resolution VI-13, and encouraged bilateral and regional agreements by Members. In adopting Resolution VII-30, the Commission also authorized the Executive Council to re-convene the Working Group should the need arise.

XI. EDUCATION, TRAINING AND MUTUAL ASSISTANCE

References: SC/IOC-VII/6
SC/IOC-VII/7
SC/IOC-VII/8
SC/IOC-VII/21
SC/IOC-VII/36
SC/IOC-VII/INF 174

Session Committee IV discussed at length and considered in detail the problem of training and education and mutual assistance, paying particular attention to the Summary Report of the Joint Session Working Groups on Training and Education in Marine Science and on Mutual Assistance (SC/IOC-VII/36) and Recommendation 12. 16 of the Bureau with the Consultative Council (SC/IOC-VII/8). It was agreed that training and education is fundamental to the advancement of marine science and its applications, in particular in the developing countries, and provides the most important means for them to build up a well-balanced marine science capability which would enable these countries to participate fully in the Long-Term and Expanded Programme on Oceanic Exploration and Research (LEPOR), as well as in other international co-operative exercises.

The future status of the Working Groups on Training and Education and on Mutual Assistance was discussed, and it was agreed that these two Working Groups would be discharged and replaced by a single body, which would be assigned terms of reference based on the terms of reference agreed upon by Session Committee III. It was further agreed that the single body should be established in time to meet prior to November 1972.

A number of items were discussed and combined into Resolution VII-31, which was adopted by the Commission in plenary.

Item 11.1 - In considering ways and means for achieving practical and rapid results, the need for Member States to designate national contacts for exchange of information on training and education was emphasized. The possibility of establishing a network of interested government and university facilities for increased co-operation in education, training and mutual assistance, was discussed. It was agreed that Unesco and IOC training programmes need to be reviewed in order to make these programmes more effective and to achieve more rapid results. Increased financial support should be sought through UNDP and other sources, including the IOC Trust Fund. The priority use of the Trust Fund for training activities was emphasized.

Some Members stressed the need to have selected textbooks and manuals translated into languages which are used by marine scientists in the developing countries. Some offered facilities on board their research ships for junior scientists and graduate students of other countries.

Item 11.2 - The Commission agreed that training and education in marine sciences should whenever possible be carried out in the developing countries themselves or at least on a regional basis. At the same time the Commission noted that the level of training needed will differ from one country to another depending upon their requirements and that these differences should be taken into account when training programmes are designed. The Commission recognized the need for the development of adequate research facilities for the support of marine scientists to enable these scientists to work more productively in their home countries. The Commission agreed that Member States should be urged to assign high priorities and to provide increased financial support to marine science programmes.

Item 11.3 - The Commission considered the present efforts in marine science training and education insufficient to cope with the steadily increasing needs of the developing countries. The Commission expressed the view that, although short-term training courses are in many cases appropriate, training courses of longer duration at various levels are also needed in order to meet different objectives.

The Commission recognized the importance of promoting public awareness of marine problems, and it was agreed that one way of achieving this goal is to introduce marine science elements into traditional courses and curricula. It was noted that summer courses in marine science for teachers of primary and secondary schools are already in existence in some countries and the Commission stressed the need to encourage and support such activities. Marine museums, aquaria, and exhibitions and the use of mass communications media were also recognized as useful educational devices.

The Commission requested that publication of newsletters on IOC activities be considered by Member States, and that such newsletters containing information on facilities and opportunities for training and education could be exchanged among Member States by their designated national contacts on training and education.

The Commission discussed the question of applying methods of mutual assistance in the field of agriculture (as applied by the UNDP, the IBRD of the World Bank, and private foundations) to mutual assistance in marine science.

XII. ANTON BRUUN LECTURES

Three lectures on matters concerning the Indian Ocean were delivered in accordance with the decision of the sixth session of the Commission and the advice of its scientific advisory bodies. A fourth lecture, which had been planned could not, unfortunately, be delivered. The names of invited lecturers and the titles of their papers were as follows:

C. Ramage	-	Meteorological results of the IIOE
J. Swallow	-	Physical results of the IIOE
G. Humphrey	-	Biological results of the IIOE
(G. Udintsev	-	Geological results of the IIOE)

Abstracts of these are given in Annex X. It is understood that the full texts will be published by Unesco for the Commission.

XIII. ARRANGEMENTS FOR EXTRAORDINARY ASSEMBLY IMMEDIATELY FOLLOWING THE SEVENTH SESSION

References: SC/IOC-VII/39
SC/IOC-VII/37

After a brief discussion of this item, the Commission decided not to examine further document SC/IOC-VII/39, and adopted Resolution VII-32 along the lines recommended by the 13th Meeting of the Bureau with the Consultative Council.

The Steering Committee established a Nominations Committee consisting of representatives from the delegations of Argentina, France, Japan, USA and USSR and which prepared proposals to facilitate the work of the Extraordinary Assembly in electing the officers of the Commission and the Members of the Executive Council.

XIV. TIME AND PLACE OF THE FIRST REGULAR ASSEMBLY

The Commission adopted Resolution VII-33 as drafted by Session Committee III.

XV. ANY OTHER BUSINESS

Some delegations expressed concern that the Commission should take appropriate actions to strengthen its relations with research institutions and programmes, and improve understanding of the particular scientific activities taken up within co-operative investigations. The Commission therefore authorized, by adopting Resolution VII-34, its Executive Council to study possible arrangements to this end.

There being no further business the Chairman closed the session at 10.00 hours, 6 November 1971.

ANNEX/ANNEXE/ANEXO/ПРИЛОЖЕНИЕ

LIST OF PARTICIPANTS/LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES/СПИСОК УЧАСТНИКОВ

Names and titles in the following lists are reproduced as handed in to the Secretariat by the delegations concerned. Countries are shown in the English alphabetical order.

Les noms et titres qui figurent dans les listes ci-après sont reproduits dans la forme où ils ont été communiqués au Secrétariat par les délégations intéressées. Les pays sont mentionnés dans l'ordre alphabétique anglais.

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World Meteorology Organization (WMO/
Organisation météorologique mondiale/
Organización Meteorológica Mundial/
Всемирная метеорологическая организация

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International Atomic Energy Agency (IAEA)/Agence internationale de l'énergie atomique (AIEA)
Organismo Internacional de Energía Atómica/
Международное агентство по атомной энергии (МАГАТЭ)
Dr. Professor Joachim JOSEPH
Director of the International Laboratory of Marine Radio-Activity
Musée océanographique
Monaco (Principauté de Monaco)

Inter-Governmental Maritime Consultative Organization (IMCO)/Organisation intergouvernementale consultative de la navigation maritime (OMCI)/
Organizacion Consultiva Marítima Intergubernamental/Межправительственная консультативная организация по мореходству (ИМКО)

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International Bank for Reconstruction and Development (IBRD)/Banque internationale pour la reconstruction et le développement/Banco Internacional de Reconstrucción y Fomento/
Международный банк реконструкции и развития

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International Telecommunication Union (ITU)/Union internationale des télécommunications (UIT)/
Union Internacional de Telecomunicaciones/
Международный союз электросвязи

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B. IOC ADVISORY BODIES/ORGANES CONSULTATIFS DE LA COI/ ORGANOS ASESORES DE LA IOC/КОНСУЛЬТАТИВНЫЕ ОРГАНЫ МОК КОНСУЛЬТАТИВНЫЕ ОРГАНЫ МОК

Advisory Committee on Marine Resources Research (ACMRR)/Comité consultatif de la recherche sur les ressources de la mer (CCRRM)/ Comité Asesor sobre Investigaciones de los Recursos Marinos/Консультативный комитет по исследованию морских ресурсов (ККИМР)

Mr. G. S. SAETERSDAL
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Director
Institute of Marine Research
Directorate of Fisheries
Bergen, Norway (also representing Norway)

Dr. Mario RUIVO
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FAO
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Rome, Italy (also representing FAO)

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Advisory Committee on Oceanic Meteorological Research (ACOMR)/Comité consultatif de l'OMM sur les recherches météorologiques océaniques (CCRMO)/Comité Asesor sobre Investigaciones Meteorológicas Oceánicas/Консультативный комитет по метеорологическим исследованиям океана

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Scientific Committee on Oceanic Research (SCOR)/ Comité scientifique de la recherche océanique/ Comité científico de Investigaciones oceánicas/ Научный комитет по изучению океана (СКОР)

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Engineering Committee on Oceanic Resources (ECOR)**/Comité de la technologie marine pour les ressources océaniques/Comité de Ingeniería sobre los Recursos Oceánicos/Инженерный комитет по океаническим ресурсам (ИКОР)

Senior Representative

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Vice-President, ECOR
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Delegates

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Cap. Nav. Ing. Ascencio C. LARA
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*Nominated but not registered.
**IOC Advisory Body as from 4 November 1971.

C. OTHER ORGANIZATIONS/AUTRES ORGANISATIONS/ OTRAS ORGANIZACIONES/ДРУГИЕ ОРГАНИЗАЦИИ

International Association for Hydraulic Research (IAHR)/Association internationale de recherches hydrauliques/Asociación Internacional de Investigaciones Hidráulicas/Международная научно-исследовательская ассоциация по гидравлике

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3. OBSERVERS FROM NON-MEMBER STATES/OBSERVATEURS D'ETATS NON MEMBRES OBSERVADORES DE ESTADOS NO MIEMBROS/НАБЛЮДАТЕЛИ ОТ ГОСУДАРСТВ НЕ-ЧЛЕНОВ

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Honduras

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5. SECRETARIAT/SECRETARIA/СЕКРЕТАРИАТ

Dr. Sidney J. HOLT (Secretary)
Dr. Gunther GIERMANN
Dr. O. MAMAYEV
Dr. L. CAPURRO
Mr. B. THOMPSON

Dr. M. HANZAWA (WMO)
Dr. U. STEFANSSON
Mrs. N. PHILIPPON

*Dr. Udintsev was unable to attend.

ANNEX II

OPENING ADDRESS BY THE DIRECTOR-GENERAL OF UNESCO

Mr. Chairman,
Your Excellencies,
Ladies and Gentlemen,

As the Intergovernmental Oceanographic Commission enters on the second decade of its existence, with the participation of 72 Member States, I have particular pleasure in welcoming here today all those who have come to join in the work of its seventh session.

During its first ten years of activity, the Commission has undertaken many large-scale projects; it has completed some of them, is continuing to co-ordinate work on others and at the same time is preparing new ones. This is a sign of vitality with which we may well be pleased. By organizing co-operative studies of the various ocean regions, the Commission has enabled participating countries to secure essential knowledge which it would probably have been difficult for them to acquire, had each State been obliged to work on its own. Through the establishment of an Integrated Global Ocean Station System, it has also sought to provide the international community with a variety of information about the state of the sea which may be needed by oceanographers, meteorologists, sailors or those interested in making use of the immense resources of the ocean. In general, the Commission has made a point of encouraging the exchange of oceanographic data, in all forms, never losing sight of their immediate practical usefulness for such purposes as the Tsunami Warning System, whereby many human lives may well be saved. At the instance of the United Nations General Assembly, it has also embarked on the preparation of a Long-Term and Expanded Programme of Oceanic Exploration and Research, which from now on will provide the general framework for its activities and those of the organizations co-operating with it.

The Commission is now on the threshold of a second period, the International Decade of Ocean Exploration, which is in fact merely the first phase of the execution of the Long-Term and Expanded Programme.

Mr. Chairman,

For reasons attributable mainly to the economic situation in which many countries find themselves, oceanography, like other sectors of scientific activity, is perhaps not expanding as rapidly as was expected by the sponors of the resolutions adopted by the General Assembly two years and three years ago, or as was hoped by marine scientists, whether concerned with the theoretical or the practical side of their subject. Nevertheless, oceanographic studies are being carried on all over the world, more and more countries are taking part in them, and the need for international co-operation is becoming apparent with equal urgency in the various fields covered by these studies. It is clearly essential, for instance, to make better use of fisheries resources, a matter which will, I am sure, lead our colleagues in the Food and Agriculture Organization of the United Nations (FAO) to increase their efforts still further. Moreover, as the mineral resources of the continental shelf are becoming accessible in ever-increasing quantities, the United Nations is playing its part by helping the countries concerned to develop prospection and the use of these resources. The meteorologists, for their part, are undertaking wide-ranging studies of the ocean environment with a view to making longer-term forecasts and reducing the risks of error: in this sector, too, the United Nations system is called on to play its part through the World Meteorological Organization (WMO). Finally, the Intergovernmental Maritime Consultative Organization (IMCO) is becoming more and more concerned with the dangers of pollution of the seas as well as with ocean transport. All these activities call for more, and more varied, research, which it falls to the Commission to co-ordinate so as to avoid duplication of work and waste of resources and energy.

Besides these co-ordinating functions, the Commission will continue to deal, itself, with certain activities of common interest, it being understood that these activities will gradually be incorporated into the Long-Term and Expanded Programme. In this connexion, the governments taking part in the preparations for the United Nations Conference on the Human Environment, to be held next year in Stockholm, have suggested that the Commission consider how far its statutory functions and financial resources may enable it to plan and co-ordinate an extensive system of oceanic monitoring

and a programme of research and checking on pollution. Indeed, through its work on the international exchange of oceanographic data, and more recently through the Integrated Global Ocean Station System, the Commission is already concerned with monitoring. Its executive body has decided, incidentally, that research on marine pollution should be given priority in the Long-Term and Expanded Programme, and that the work should be co-ordinated by the Commission itself. It is probable, however, that the Stockholm Conference will ask that the work to be undertaken in this matter be carried out on a larger scale and more rapidly than is at present contemplated. In the preparatory work for the Stockhom Conference, it has already become clear that the ocean environment urgently requires the attention of the international community. It is therefore necessary to make sure now that the Commission is, or may easily be, equipped with a structure suited to the aims in view, and that it commands sufficient resources to achieve those aims.

In response to the desire expressed by the General Conference of Unesco in resolution 2.344 (d), adopted at its sixteenth session, you will also be called on to consider the question of the legal status of ocean-data acquisition systems. You will have seen from the documents submitted to you, that Unesco and IMCO have agreed to follow up the Commission's work by convening a preparatory conference of governmental experts at the beginning of 1972 to draft a convention on this subject, which will later be submitted to a plenipotentiary conference. This decision has been notified to the United Nations Enlarged Committee on the Peaceful Uses of the Seabed and the Ocean Floor, whose third sub-committee is studying matters relating to scientific research and the prevention of pollution, in preparation for the next Conference on the Law of the Sea. The Committee will undoubtedly wish to take account of these studies, and of the other relevant measures taken by the Commission and the various organizations interested.

You will also have to take up certain legal questions connected with scientific investigations of the oceans, including that of arrangements among States for securing appropriate freedom for marine research. Problems of this sort are of direct interest to the Committee on the Peaceful Uses of the Seabed and the Ocean Floor, which will, I am sure, recognize the usefulness of the principles formulated by the Commission and regional bodies to govern relations between States in this respect. I think the Commission has an important part to play here. But I also believe that it has nothing to gain from over-involvement in the consideration of legal questions which are particularly controversial, and that it would, moreover, be regrettable for it to introduce such issues for discussion in the governing bodies of Unesco.

Lastly, you will have to consider certain financial, administrative and constitutional aspects of the work of the Commission. As you know, it was to enable the Commission to perform its task more efficiently that the General Conference, at its sixteenth session, decided on a revision of its Statutes. Under these amended Statutes, which will come into force immediately after the close of the present session, the Commission remains a body established within Unesco. There are, however, new provisions aimed at ensuring closer co-operation with the other organizations concerned with oceanographic activities. For example, the Secretariat of the Commission is to become a joint body consisting of staff members from the various participating organizations in the United Nations system; and other provisions are included with a view to developing joint action. The Secretariat of the Commission, as it exists at present, had in any case already started working along these lines in 1970. The aims of the Commission thus remain the same, but its functions are defined more comprehensively and will, as recommended, be broadened to some extent.

Nevertheless, however good the new structures planned may be, their efficiency will depend, ultimately, on the operating funds and the staff to be made available to the Commission by Unesco and the other United Nations organizations concerned. The General Conference, for its part, decided at its sixteenth session to increase Unesco's contribution substantially for the financial period 1971-1972. Similarly, I intend to ask the Conference, at its seventeenth session, for a further increase in appropriations for 1973-1974. Some of the other participating organizations have, of course, already given some support to the common undertaking; but I hope that they will continue, and intensify, their efforts, and that those organizations which have not yet taken an active part in the work will soon join their endeavours with ours, so far as their means permit.

A number of suggestions have also been put forward with a view to making more effective use of the resources available. You asked your Chairman to propose a new structure for the subsidiary bodies for this purpose and you are now to examine, this week, the proposals he has submitted to you. Further ideas, for example on secretariat services, were advanced at the 12th meeting of the Bureau and the Consultative Council, held in Bordeaux (France) in March 1971. Following that meeting, your Chairman formulated certain comments and suggestions which are reproduced in

document SC/IOC-VII/43. Lastly, I myself have made observations on the subject in an addendum to that document, to which I would venture to draw your attention.

This said, and relatively important as these administrative and financial questions are in your agenda, I hope that your consideration of them will not divert your attention unduly from your main concern, which should obviously be to achieve success in the scientific activities you have undertaken, and to arrange for the international co-operation required for that purpose. In the last analysis, the Commission's successful accomplishment of its task will depend on how far it is able to give all its members, including the less-developed among them, the opportunity of sharing equitably in the execution of the Long-Term and Expanded Programme. It is clear that the communication of scientific data by way of exchanges is essential; but it is equally obvious that this is not enough to guarantee equitable participation. The governments of developing maritime countries must also receive the necessary aid if they are to be able to interpret such data and make use of them in practice. I consider that Unesco has an essential part to play in this respect by training specialists and informing public opinion, so as to secure a far wider appreciation and understanding of the vital importance of the ocean, its fauna and flora, its properties and resources, for the peace, the well-being and - let us face it - the survival of mankind.

Ladies and gentlemen,

Unesco and its Intergovernmental Oceanographic Commission cannot relax their efforts if these purposes are to be achieved, and I therefore offer you my warmest good wishes for the success of your work.

ANNEX III

OPENING SPEECH BY THE CHAIRMAN OF IOC

Mr. Director-General, distinguished representatives,

First of all I want to thank you, Mr. Director-General for your kindness to have opened this seventh session of the Intergovernmental Oceanographic Commission and I am particularly grateful to you for the important observations you have made with regard to that opening. This indeed will be the last session of our Commission to be held under the old Statutes and we sincerely hope that the continuation and acceleration of our work under the Statutes adopted by the sixteenth session of the General Conference of Unesco will meet with the approval and active support from our Member States, as well as with continued assistance from our parent organization, Unesco, and from the other Specialized Agencies that jointly provide for a broadened Secretariat of the Commission.

Alas, a number of eminent scientists and governmental experts that so often have participated closely in our work and that we would have liked so much to have with us today were taken away from among the living and have left a gap that cannot be filled but that fills all of us with sadness. As far as was brought to the attention of the Secretariat our Commission has lost the support of the following scientists, many of whom were well known to us:

Sir Archibald Day	Previous delegate of the United Kingdom to IOC
Dr. Columbus Iselin	Previous Director of Woods Hole Oceanographic Institution
Mr. W. S. Wimpenny	One-time Director of Fisheries Laboratory, Lowestoft and Secretary of the International Whaling Commission
Dr. W. M. Chapman	United States of America
Dr. M. B. Schaefer	United States of America, Executive Director of the Inter-American Tropical Tuna Commission
Mr. Gunnar Thorson	Denmark, who was long associated with the oceanographic programme of Unesco
Academician L. A. Zenkevitch	Institute of Oceanology in Moscow
Dr. V. G. Bogorov	Corresponding Member of the USSR Academy of Science.

In order to honour the memory of these outstanding scientists and sympathetic representatives of their countries, I ask the distinguished representatives assembled here to observe a few moments silence.

There is also reason for rejoicing, as the Commission, since its sixth session, is now in a position to welcome five new members, bringing the total membership to 72. These new Member States are: Iraq, Malta, Mauritius, Portugal and Syrian Arab Republic.

To these new members I extend a hearty welcome in our midst and express the hope that their membership of the Commission will be of great mutual advantage. That it will bring to them increased possibilities of participation in co-operative investigations, while at the same time increasing the quality of their oceanographic expertise and experience. On the other hand we hope their membership will bring to the Commission a broader scope of activities and enlarge the Commission's opportunities to be of assistance in the field of oceanic research with a view to practical application of the scientific results thereof, for the benefit of mankind as a whole and of these new members in particular.

Distinguished representatives, since our last session a new decade has started, the seventies, and at the same time our Commission also moved into the second decade of its existence. The decade before us will undoubtedly be dominated by progressive ocean technology, existing scientific research and results and will demand new, partially unexplored, ways to master and manage that technology. In our own field this precipitous progress will become manifest in oceanographic exploration and research, but it will also lay on the shoulders of all of us the increased burden to keep a constant watch on the quality and health of the marine environment.

The prospects are indeed bright for new and greater ocean uses than ever before in the life of mankind and it would be presumptious to try and outline these possibilities to a meeting that gathers so much competence in this field. But let us not forget that we now are in a position to take decisions that may have far-reaching consequences, for better or for worse. Our Commission must prepare itself and gird its loins to become - more than ever before - an important part of an international machinery that will guard and protect the integrity and health of the human environment. It is this environment in its unpolluted stage that I consider to be the true heritage of mankind, because without that environment no other heritage would be of any use to us. In this connexion the IGOSS project receives new impetus, not only because of its operational uses for the benefit of oceanographers, be they physical, chemical or biological, but also because of its inherent possibilities to serve, at the same time and with relatively little additional cost, as a major environmental monitoring network.

However, as our scanty knowledge of the oceans requires much more scientific research, not only with a view to learning more about its nature and resources, but also to protect that nature and avoid or curb the dangers that threaten that nature, a speedy and accelerated development of the Long-Term and Expanded Programme of Oceanic Exploration and Research, with the International Decade of Oceanographic Exploration as a pacemaker for the first years is a must; is an absolute necessity. The first report of the Group of Experts on the Long-Term Scientific Policy and Planning that is before this Commission may assist it in a considerable way to enlarge and deepen this scientific research - and at short notice.

Hand in hand with these preoccupations go the problems of the exchange of scientific data and information and it is gratefully acknowledged here that in this field considerable steps forward have been taken. However, the preparation of atlases containing scientific results of co-operative investigations carried out under the auspices of the Commission does not show the progress I would have liked to be able to report to you. It is this particular type of dissemination of scientific results that will require much of our attention in the near future. Dissemination and exchange of scientific information can also be regarded as one of the many aspects of mutual assistance. There are several reasons why on this subject of mutual assistance less progress can be reported than the importance of the subject warrants.

While on the one hand the Commission tries, with its limited resources and within its terms of reference, to be of the greatest possible service to Member States and gives guidance to a number of co-operative investigations in ocean areas, on the other hand it has to keep itself informed on what is going on in other domains of intergovernmental co-operation. It is especially the manifold initiatives that were taken by the United Nations with regard to the world's ocean that make it imperative that IOC keeps pace with these developments and provides whatever scientific information is needed or requested. We will have time to discuss the activities of the Enlarged United Nations Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction, which committee has also been instructed to act as the preparatory organ for the Conference on the Law of the Sea to be convened late in 1973. But also the Preparatory Committee for the United Nations Conference on the Human Environment, to be convened at Stockholm in June 1972, as well as the Intergovernmental Working Groups of the Preparatory Committee, have results to report that already now require the Commission's attention and ask questions to the Commission that will require a fairly definite answer. Closely interrelated with these international activities is the work of expert groups like GESAMP or SCOPE. And our Commission will have to take a decision with regard to the Global Investigations of Pollution in the Marine Environment (GIPME), to be established as one of the major central projects in the Expanded Programme. It is also in this connexion that I would like to commend the Commission's scientific advisory bodies for the assistance and advice they are giving to us. We need this advice and we cherish it and hope it will contine to be forthcoming when requested, or when considered necessary by these advisory bodies.

I realize my bird's eye view of the situation and developments over the last two years is far from comprehensive. It only has served to show you - and especially our new members pres

here for the first time - how very complex subject-matter is and how complicated the problems we have to solve. Much of our success in the future will depend on the spirit of co-operation that has always been an outstanding feature in the discussions between Member States of this Commission. But also we will have to rely heavily on the services and support of the parent organization, Unesco, as well as on those intergovernmental organizations that co-operate in ICSPRO, to wit the United Nations itself and FAO, WMO and IMCO.

However, notwithstanding considerable increases in budget and staff, and notwithstanding our Commission already occupies a relatively large part of conference and translation services in Unesco House, and without trying to belittle the support from the other organizations in personnel and in services, our Commission still is unable to carry out its manifold tasks as it should do, unable to observe always the deadlines laid down in the Commission's Rules of Procedure with regard to circulation of Conference documents in the four working languages. It was for this reason that, after a frank and open discussion of this unsatisfactory situation between the Director-General of Unesco and the Bureau and Consultative Council in March, that the Chairman was requested, with the assistance of the Secretary, to collaborate with the Director-General of Unesco in considering further these matters and to prepare a list of matters to be discussed at the seventh session of the Commission. The relevant documents are now before the Commission for further consideration.

But not only the Commission's relations and working arrangements with Unesco will require your attention. Also it must be tried to streamline the internal structure of the Commission so as to be able to carry out more work with the same personnel. For this reason a number of the subsidiary bodies of the Commission may have to disappear or carry out their tasks in a different manner. Also the Commission may want to reappraise its situation with regard to the tasks and duties it has at present to fulfil.

But I will not ask your indulgence much longer. Too much has already been said by me and it is time to focus our attention on action. Whatever the Commission is required to do, it can do. But only if all of us want to do it and are willing to co-operate closely. May this spirit of co-operation prevail in everything we undertake, because without it we are lost and will achieve nothing worthwhile. United we may succeed, divided we will doubtlessly fail.

As I said at a different occasion once, there is a famous navy flag signal that signals to all ships: LET US STAY TOGETHER FOR MUTUAL ASSISTANCE. This flag signal still is, as it was then, flying from the starboard yard-arm. It will remain there until we have reached our goal.

ANNEX IV

A. LIST OF IOC MEMBER STATES (as at November 1971)

Algeria
Argentina
Australia
Austria
Belgium
Bulgaria
Brazil
Canada
Chile
China (Republic of)
Colombia
Congo (Brazzaville)
Cuba
Denmark
Dominican Republic
Ecuador
Egypt (Arab Republic of)
Finland
France
Germany (Federal Republic of)
Ghana
Greece
Guatemala
Iceland
India
Indonesia
Iraq
Israel
Italy
Ivory Coast
Jamaica
Japan
Korea (Republic of)
Lebanon
Madagascar
Malaysia
Malta
Mauritius
Mauritania
Mexico
Monaco
Morocco
Netherlands
New Zealand
Norway
Pakistan
Panama
Peru
Philippines
Poland
Portugal
Romania
Senegal
Singapore
South Africa
Spain
Sweden
Switzerland
Syrian Arab Republic
Tanzania
Thailand
Trinidad and Tobago
Tunisia
Turkey
Ukrainian SSR
USSR
United Kingdom
U. S. A.
Uruguay
Venezuela
Viet-Nam (Republic of)
Yugoslavia

Total: 72 Members

B. IOC BUREAU - SEVENTH SESSION

Chairman:

Rear-Admiral W. LANGERAAR
Oceanographic Adviser
Ministry of Science and Education
Thorbeckelaan 360
The Hague, Netherlands

Vice-Chairmen:

Capt. Orlando A. AMARAL AFFONSO
Diretoria de Hidrografia e Navegaçao
Ministerio da Marinha
Rio de Janeiro, Brazil

Professor Carlo MORELLI
President
Osservatorio Geofisica Sperimentale
Viale Gessi 4
Trieste, Italy

C. MEMBER STATES REPRESENTED ON THE CONSULTATIVE COUNCIL - SEVENTH SESSION

Argentina
Australia
Chile
Finland
France
Germany (Federal Republic of)
India
Japan
Madagascar
Mexico
Philippines
Poland
Senegal
Ukrainian SSR
USSR
United Kingdom
USA

ANNEX V

AGENDA

1. Opening of the session.

2. Adoption of the agenda.

3. Review of work accomplished between the sixth and seventh sessions.

   3.1 Report by the Secretary.

   3.2 Reports of the 11th, 12th and 13th meetings of the Bureau with the Consultative Council.

   3.3 Implementation of resolutions of the sixth session.

   3.4 Reports by the scientific advisory bodies of the Commission, the Group of Experts of Scientific Aspects of Marine Pollution and other expert groups.

4. Consideration of implications for the Commission of relevant resolutions adopted during the 24th and 25th General Assemblies of the United Nations and the sixteenth session of the General Conference of Unesco.

5. Establishment of session committees, and organization of work of the session.

6. Long-term and Expanded Programme of Oceanic Exploration and Research with emphasis on the International Decade of Ocean Exploration as the acceleration phase (including arrangements for its future development and co-ordination).

7. Financial, administrative and constitutional aspects of the Commission's activities.

   7.1 Rules of procedure of the Commission.

   7.2 Consideration of a rationalized structure for the Commission's subsidiary bodies.

   7.3 Budget and staff for the remainder of the present biennium 1971-1972 and for the coming biennia 1973-1974, and 1975-1976.

   7.4 Working relations between the Commission and Unesco, also taking into account relations with the other organizations of the United Nations system supporting the broadened IOC Secretariat.

8. Planning, conduct and follow-up of co-operative investigations.

   8.1 IIOE

   8.2 ICITA

   8.3 CSK

   8.4 CICAR

   8.5 CIM

   8.6 CINECA

   8.7 Southern Ocean

   8.8 Systematic observations in the North Atlantic

8. 9 New proposals:

8. 9. 1 Global Investigations of Pollution in the Marine Environment (GIPME)

8. 9. 2 Other new proposals by GELTSPAP

8. 9. 3 New proposals from Member States, advisory bodies or other sources

8. 10 Future arrangements

9. Joint operational activities

9. 1 IGOSS and activities of related groups of experts

9. 2 Oceanic data management

9. 3 Monitoring marine pollution

9. 4 Future arrangements for co-ordinating such activities

9. 5 Tsunami warning system in the Pacific

10. Legal aspects of scientific investigations of the ocean

10. 1 Consideration of work of the Group of Experts on the Legal Status of Ocean Data Acquisition Systems (ODAS).

10. 2 Consideration of the work of the working group on Legal Questions Related to Scientific Investigations of the Oceans.

11. Education, Training and Mutual Assistance

11. 1 Measures necessary to obtain practical and immediate results.

11. 2 Development of national and regional programmes and facilities through mutual assistance

11. 3 Training and education in the field of marine science and its technology, and promoting public awareness of ocean affairs.

12. Anton Bruun lectures

12. 1 Meteorological results of the IIOE (C. Ramage)

12. 2 Physical results of the IIOE (J. Swallow)

12. 3 Geological results of the IIOE (G. Udintsev)

12. 4 Biological results of the IIOE (G. Humphrey)

13. Arrangements for extraordinary assembly immediately following the seventh session.

14. Time and place of the first regular assembly.

15. Any other business.

ANNEX VI

LIST OF ABBREVIATIONS AND DEFINITIONS

ACMRR (of FAO)	Advisory Committee on Marine Resources Research
ACOMR (of WMO)	Advisory Committee on Oceanic Meteorological Research
BATHY	Bathythermograph
CICAR	Co-operative Investigations of the Caribbean and Adjacent Regions
CIM	Co-operative Investigations of the Mediterranean
CINECA	Co-operative Investigation of the Northern part of the Eastern Central Atlantic
CMG (of IUGS)	Commission for Marine Geology
CSK	Co-operative Study of the Kuroshio and Adjacent Regions
ECOR	Engineering Committee on Oceanic Resources
FAGS (of ICSU)	The Federation of Astronomical and Geophysical Services
FAO	Food and Agriculture Organization of the United Nations
GARP (of ICSU and WMO)	Global Atmospheric Research Programme
GATE	GARP Atlantic Tropical Experiment
GELTSPAP	Group of Experts on Long-Term Scientific Policy and Planning
GESAMP	Group of Experts on the Scientific Aspects of Marine Pollution
GIPME	Global Investigation of Pollution in the Marine Environment
GTS (of WMO)	Global Telecommunication System
IABO	International Association of Biological Oceanography
IAEA	International Atomic Energy Agency
IAPSO (of IUGG)	International Association for the Physical Sciences of the Oceans
ICES	International Council for the Exploration of the Sea
ICITA	International Co-operative Investigations of the Tropical Atlantic
ICNAF	International Commission for the Northwest Atlantic Fisheries
ICSPRO	Inter-secretariat Committee on Scientific Programmes relating to oceanography
ICSU	International Council of Scientific Unions
IDOE	International Decade of Ocean Exploration
IGOSS	Integrated Global Ocean Station System
IHO	International Hydrographic Organization
IIOE	International Indian Ocean Exploration
IMCO	Intergovernmental Maritime Consultative Organization
ITU	International Telecommunication Union
IUGG (of ICSU)	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
LEPOR	Long-term and Expanded Programme of Oceanic Exploration and Research

ODAS*	Ocean Data Acquisition Systems
POLEX	Polar Experiment
PSMSL (of FAGS)	Permanent Service for Mean Sea Level
ROSCOP	Report of Observations Samples collected by Oceanographic Programmes
SCAR	Scientific Committee on Antarctic Research
SCOR (of ICSU)	Scientific Committee on Oceanic Research
SMG (of GARP)	Scientific Management Group
TESAC	Temperature, Salinity and Currents
UNDP	United Nations Development Programme
UNISIST	World Science Information System
WARC (of ITU)	World Administrative Radio Conference
WMO	World Meteorological Organization
WWW (of WMO)	World Weather Watch
XBT	Expendable bathythermograph

Station describes a geographic location where data are observed by appropriate sensing devices.

* Ocean Data Acquisition System (ODAS) describes the vehicle, device or platform on which or in which the station is taken ("occupied"). ODAS may be fixed (towers, lightships, weather ships, buoys) or mobile (aircraft, ships, satellites, drifting buoys, etc.).

ANNEX VII

ADOPTED RESOLUTIONS

RESOLUTION VII-1

ENGINEERING COMMITTEE ON OCEANIC RESOURCES

The Intergovernmental Oceanographic Commission,

Noting the value of the advice and assistance provided by its scientific advisory bodies in the past,

Recognizing the benefits to be derived from competent advisory bodies,

Recognizing the rôle of engineering in the development of many oceanographic efforts,

Bearing in mind its resolution VI-20 encouraging the formation of such a committee and Recommendation 11.19 of the Bureau and the Consultative Council,

Having examined the Statutes, terms of reference and principles governing the Engineering Committee on Oceanic Resources (ECOR),

Concludes that ECOR is an appropriate body to tender advice to the Commission and accepts it as an advisory body.

RESOLUTION VII-2

JOINT OCEANOGRAPHIC ASSEMBLIES

The Intergovernmental Oceanographic Commission,

Recalling that the Bureau and Consultative Council in their Recommendation 12.2 had recommended to the seventh session that it encourage the scientific organizations concerned to consider the possibility of organizing the next Joint Oceanographic Assembly in 1976, and to develop plans for that meeting in time to permit governments, intergovernmental agencies and other sponsors to make adequate budgetary provisions,

Noting that the Executive Committee of SCOR, including the chairmen of IAPSO, IABO and CMG, has accepted the above proposal in principle, and is taking steps to initiate development of the programme,

Endorses the holding of the next Joint Oceanographic Assembly in 1976;

Requests the scientific bodies concerned, including the Commission's advisory bodies, to proceed with organization of the programme;

Invites Member States and non-Member States, Unesco and the other organizations of the United Nations system whose executive heads participate in ICSPRO, and other interested organizations and institutions, to support the Assembly, including the making of adequate budgetary provisions.

RESOLUTION VII-3

OCEANOGRAPHIC PARTICIPATION IN THE GARP ATLANTIC TROPICAL EXPERIMENT (GATE)

The Intergovernmental Oceanographic Commission,

Having noted the discussions and recommendations by GELTSPAP concerning the opportunities for conducting oceanographic investigations in conjunction with various meteorological experiments under the Global Atmospheric Research Programme (GARP),

Endorses Recommendation 12.10 of the Bureau and Consultative Council regarding oceanographic participation in GATE;

Being advised that it had not yet been possible to make arrangements for an oceanographer to work with SMG or to create an "action unit" but that there seemed to be some possibilities in the near future,

Instructs the Secretary to expedite its implementation; and

Urges Member States to consider favourably giving assistance thereto.

RESOLUTION VII-4

UNITED NATIONS GENERAL ASSEMBLY RESOLUTION 2750 (XXV)

The Intergovernmental Oceanographic Commission,

Noting the invitation of the United Nations General Assembly (resolution 2750 (XXV)) to the Commission to co-operate fully with the Enlarged Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction in the implementation of the United Nations resolution,

Instructs the Secretary to inform the Secretary-General of the United Nations and the Chairman of the Enlarged Committee that the Commission is prepared to co-operate fully with the Enlarged Committee, upon request of the said Committee and in the fields of the Commission's competence;

Directs the Chairman to ensure appropriate representation of the Commission at meetings of the Enlarged Committee, and to discuss with the Chairman of the Enlarged Committee, scientific needs of the latter;

Emphasizes further that the Commission is prepared to contribute to the extent of its resources to the scientific and technical support necessary on marine research, including research on marine pollution, for the work of the Enlarged Committee.

RESOLUTION VII-5

A WORKING DOCUMENT BASED ON THE REPORT OF GELTSPAP AND RELATED PAPERS

The Intergovernmental Oceanographic Commission,

Having received the report of the first session of the Group of Experts on Long-Term Scientific Policy and Planning,

Considering the report to be an extremely important working document of the Commission,

Expresses its thanks to the Chairman and members of the Group of Experts;

Considering further that it is now necessary to prepare a document more appropriate for wide distribution, based largely on the report of the Group of Experts but taking into account comments that have been made on it by Member States, advisory bodies and special workshops, and the discussions and decisions of the seventh session,

Instructs the Secretary to arrange for the preparation and presentation of a text to the first session of the Executive Council with a view to its publication as soon as possible thereafter in the IOC Technical Series.

RESOLUTION VII-6

CRITERIA FOR ASSIGNMENT OF PRIORITIES WITHIN LEPOR

The Intergovernmental Oceanographic Commission

Approves the Report of the Group of Experts on Long-Term Scientific Policy and Planning (GELTSPAP) as a basis for the planning and subsequent implementation of the Long-Term and Expanded Programme of Oceanic Exploration and Research (LEPOR);

Adopts the following questions as the most important criteria of those suggested by the Group for priorities to be assigned to international programmes recommended by GELTSPAP:

1. Is its purpose to learn more about the nature and resources of the ocean in accordance with the purpose of the Expanded Programme as defined by the Commission?

2. Can the proposed research or supporting service most effectively be done or provided through international co-operation?

3. Does it call for concerted action by States and/or agencies?

4. Are a number of States in principle willing to support it by their active participation or by assisting or facilitating participation?

5. Will it enhance or otherwise relate with other elements of the Expanded Programme and thus contribute to its coherence?

6. Will its results help meet the needs of developing countries and will the participation of those which are interested be facilitated?

7. Does the field of research with which it is concerned require increased emphasis because of the economic potential of the resources, or ocean use, or the urgency of the human need to which it relates?

8. Do adequate scientific and technical manpower and facilities exist, and can they be made available?

RESOLUTION VII-7

INTERNATIONAL DECADE OF OCEAN EXPLORATION (IDOE)

The Intergovernmental Oceanographic Commission,

Recognizing the International Decade of Ocean Exploration as the acceleration phase and an essential initial element of the Long-Term and Expanded Programme of Oceanic Exploration and Research,

Noting Resolution 2467 (D) (XXIII) of the United Nations General Assembly welcoming the concept of an International Decade of Ocean Exploration to be undertaken within the framework of LEPOR and inviting Member States to formulate proposals for international scientific programmes and activities to be undertaken during the IDOE and to transmit those proposals to the Commission and to embark on such activities as soon as practicable,

Desiring to accelerate LEPOR by the initiation of the IDOE on an international scale,

Proposes that the IDOE shall last from 1971 through 1980 and consist of appropriate national oceanographic activities of significant size and scope in which the participation of scientists from other nations is actively sought and achieved in the early stages of the programme,

Invites Member States to inform the Secretary of major projects which they wish to be considered as components of the IDOE,

Instructs the Secretary to bring such proposals promptly to the Executive Council so that they can be efficiently processed and co-ordinated.

RESOLUTION VII-8

PROGRAMMES OF MAJOR IMPORTANCE IN LEPOR

The Intergovernmental Oceanographic Commission,

Noting the existing IOC programmes either on a global or regional scale, such as IIOE, ICITA, CSK, CINECA, Southern Ocean, Systematic observations in the North Atlantic,

Considering the scientific significance of certain new programmes suggested in the Report of the first session of GELTSPAP and which are of major importance for LEPOR, the interest that many Member States will have in them, the possibilities that they provide for the participation of many Member States, especially including developing countries, and taking account of regional interest,

Recognizing that an important feature of most of these programmes is the extent to which essential work on them can be done at national level with results being used in regional and global contexts, while other aspects of them require regional and co-operative research,

Adopts the following new programmes (listed in the order in which they appear in the GELTSPAP Report):

1. Upwelling, including the ocean-atmosphere interaction (paras. 18-21)
2. Survey of Living Resources (paras. 26 and 34)
3. Coastal ecology and Mariculture (paras. 29 and 35)
4. Global Investigation of Pollution in the Marine Environment (para. 45)
5. Morphological charting of the sea floor (para. 63)

6. Systematic Geological and Geophysical Surveys of Continental Margins, including the Marginal Seas (paras. 64-65)

7. River discharge of sediments and along-shore transport (para. 66)

8. Physical research related to IGOSS (para. 93).

RESOLUTION VII-9

INTERNATIONAL WORKSHOP ON MARINE GEOSCIENCES

The Intergovernmental Oceanographic Commission,

Notes with favour the fact that the International Workshop on Marine Geosciences held in Honolulu, 20-24 September 1971, has further refined priorities for geological and geophysical investigations in its report to SCOR,

Requests SCOR to render its final advice on this matter to the Commission in time for consideration at the first session of the Executive Council,

Requests the Secretary to make the report together with the views of SCOR available to Member States as quickly as possible.

RESOLUTION VII-10

INTERNATIONAL INSTITUTE OF PHYSICAL OCEANOGRAPHY

The Intergovernmental Oceanographic Commission,

Having considered preliminary comments on the establishment of an International Institute of Physical Oceanography, as proposed by GELTSPAP,

Noting the results of the inquiry carried out by SCOR and the comments of the first session of ACOMR,

Noting possible parallels between this proposed institute and the existing International Institute of Theoretical Physics at Trieste which is jointly supported by the Government of Italy, IAEA and UNESCO,

Instructs the Secretariat further to explore possibilities in this matter and to report to the first session of the Assembly.

RESOLUTION VII-11

INTEGRATED SCIENTIFIC INFORMATION SERVICE ON AQUATIC SCIENCES AND FISHERIES

The Intergovernmental Oceanographic Commission,

Considering as of prime importance the task of establishing an integrated scientific information service on aquatic sciences which would include not only bibliographical services but also other

important matters such as directories of specialists and institutions, training opportunities, various periodical reviews, etc.,

Considering the benefits of such an information system for developing countries and the possibility of requesting funds for support of this service from UNDP,

Having reviewed doc. SC/IOC-VII/42 prepared in response to Recommendation 12.4 of the Bureau and Consultative Council containing a first outline of an Information System on aquatic sciences,

Recognizing the important activities of the Fishery Resources Division of FAO in this field over the last ten years and their significance for the Commission and its Member States,

Also recognizing that the FAO system forms a nucleus around which an integrated system can be built and with which Member States, as a first step, should be encouraged to collaborate in order to increase its efficiency and reduce its costs,

Noting with appreciation, in this connection, the support given by the Federal Republic of Germany and France to FAO,

Noting further the contribution that the Unesco Office of Oceanography has begun to make to this work,

Instructs the Secretary to prepare in close co-operation with representatives of FAO a second and comprehensive draft plan for the establishment of an Integrated Information System on Aquatic Sciences insofar as this pertains to marine research, to be presented to the first session of the Executive Council,

Further instructs the Secretary to communicate this Resolution to the executive office for UNISIST and ensure co-ordination as appropriate of the above plan with activities towards the establishment of a World Science Information System.

RESOLUTION VII-12

PUBLICATION "INTERNATIONAL MARINE SCIENCE"

The Intergovernmental Oceanographic Commission,

Noting the proposal made in the Report of the first session of GELTSPAP (Para. 91), particularly that the co-ordination elements most urgently required to facilitate the implementation of LEPOR are the timely exchange and widespread availability of information on various projects and programmes, and that a major improvement in the interrelation of elements of the Expanded Programme could be achieved by the publication of a LEPOR newsletter.

Having considered Recommendation 12.4 of the Bureau and Consultative Council requesting the Secretary inter alia to prepare a detailed proposal, in consultation with the organizations whose executive heads participate in ICSPRO, for establishing an international information service for national and regional marine science programmes,

Taking into account the important rôle which "International Marine Science", the newsletter published by Unesco and prepared jointly with FAO and with the assistance of other agencies, played as an information organ of the Commission, highlighting the main aspects of the activities of IOC and its subsidiary bodies as well as of member countries and of UN Agencies and other international bodies concerned, and which was temporarily suspended,

Keeping in mind that the promulgation of information on Declared National Programmes and determination of cruises and activities under that category could be better achieved by circular bulletins, to be distributed as soon as the information reaches the Secretariat, as has been done in recent months,

Urges the Director-General of Unesco to help in positively solving the problem of publishing "International Marine Science" start[ing] from 1972, as a regular bulletin of the Commission, in order to provide timely information on marine science activities, particularly on programmes of an international nature and other information of value for member countries of the Commission and to the international scientific community dealing with the oceans,

Calls upon the Secretary, in consultation with interested participants in ICSPRO, to prepare a layout for the new series of "International Marine Science",

Requests the organizations whose executive heads participate in ICSPRO to make appropriate arrangements for contributing material to "International Marine Science".

RESOLUTION VII-13

IMPROVING THE EFFECTIVENESS OF THE COMMISSION'S WORK ON THE STUDY OF THE OCEANS

The Intergovernmental Oceanographic Commission,

Noting with satisfaction the considerable amount of work accomplished between its sixth and seventh sessions, with the active support of Unesco and the other organizations whose executive heads participate in ICSPRO, and the co-operation of advisory bodies of the Commission, in the field of investigation of the oceans,

Noting further that the efforts by its Member States, by the scientific advisory bodies and by experts, have resulted in the elaboration of the Long-term and Expanded Programme of Oceanic Exploration and Research, opening wide possibilities for the planning and carrying out of research,

Considering that, in these conditions, the main organizational and financial effort should henceforth be shifted from administrative questions to scientific and technical ones,

Instructs the Executive Council and the Secretary to take effective measures to ensure:

more energetic execution of programmes which have been adopted and undertaken;

more rapid publication of information on programmes already carried out;

practical realization of the Integrated Global Ocean Station System (IGOSS);

increased effectiveness of the ocean data exchange system;

wider participation by developing countries in the study of the ocean and its resources;

Calls on Member States to take energetic measures to solve these problems and to concentrate efforts on accelerating oceanic research.

RESOLUTION VII-14

DRAFT RULES OF PROCEDURE

The Intergovernmental Oceanographic Commission

Having considered the report of the second session of the Commission's Ad Hoc Working Group of Governmental Experts to Draft New Rules of Procedure,

Transmits to the Extraordinary Assembly convened in accordance with Article 15. 1 of the Statutes as amended by the sixteenth session of the General Conference of Unesco a draft of the new rules, which is annexed* to this resolution,

Recommends the adoption of these draft rules in their entirety.

RESOLUTION VII-15

A RATIONALIZED STRUCTURE FOR THE COMMISSION

The Intergovernmental Oceanographic Commission,

Recalling its resolution VI-15,

Desiring a more rationalized system for its subsidiary bodies in order to conduct its work more efficiently,

Instructs the Chairman of the Commission, with the assistance of the Secretary, to study further the problem of a more rationalized system, taking into account draft resolution DR. P. 4 prepared by a drafting group of Session Committee III at the seventh session (Annex) and the discussions and the indicative vote which took place during the session, and to circulate the result of this study for prompt comment and further consideration at the first session of the Executive Council with a view to decision at the first session of the Assembly.

ANNEX TO RESOLUTION VII-15

DRAFT RESOLUTION DR. P4 - OPERATIVE PARAGRAPHS

1. To establish three Standing Committees of the Commission, to be known as:

   Standing Committee on Scientific Investigations (CSI);
   Standing Committee on Scientific Services (CSS);
   Standing Committee on Mutual Assistance, Training and Education (MATE).

2. To establish the terms of reference of these Standing Committees as set forth in the Attachment to this resolution.

3. To invite the organizations whose Executive Heads participate in ICSPRO and the advisory bodies to the Commission on aspects of marine science and its technology to participate in the work of these Standing Committees without the right to vote.

4. To assign responsibility to CSI for the following subsidiary bodies:

   Editorial Boards for the Atlases of the International Indian Ocean Expedition (IIOE);

   Editorial Committee for the Atlases of the International Co-operative Investigations of the Tropical Atlantic (ICITA);

   International Co-ordination Group for the Co-operative Study of the Kuroshio and Adjacent Regions (CSK);

*Not reproduced here as the rules were subsequently adopted in their entirety by the extraordinary session and are annexed to the Report of that session.

IOC/CSEM/GFCM Group for Technical Co-ordination (GTC) of the Co-operative Investigations of the Mediterranean (CIM);

International Group for the Scientific Co-ordination (IGSC) of the Co-operative Investigations of the Mediterranean (CIM);

International Co-ordination Group for the Southern Ocean;

International Co-ordination Group for the Co-operative Investigations of the Caribbean and Adjacent Regions (CICAR);

ICES/ICNAF/IOC Co-ordinating Group for the Systematic Studies in the North Atlantic;

ICES/FAO/IOC Co-ordinating Group for the Planning and Execution of the Co-operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA)

Group of Experts on Oceanographic Research as it Relates to IGOSS (formerly "IOC Group of Experts on Ocean Variability").

5. To assign responsibility to CSS for the following subsidiary bodies:

International Co-ordination Group on the Tsunami Warning System in the Pacific;

Working Committee for an Integrated Global Ocean Station System (IGOSS);

IOC Working Group on Oceanographic Data Exchange;

WMO/IOC Group of Experts on Telecommunication;

IOC/WMO Group of Experts on IGOSS Technical Systems Design and Development and Service Requirements.

6. To discharge with appreciation the following subsidiary bodies:

IOC Working Group on Mutual Assistance;

IOC Working Group on Education and Training in Oceanography;

Ad Hoc Working Group of Governmental Experts to Draft New Rules of Procedure for the Commission;

Group of Experts on the Legal Status of Ocean Data Acquisition Systems (ODAS);

WMO/IOC Group of Experts on Co-ordination of Requirements;

IOC Group of Experts on Long-Term Scientific Policy and Planning (GELTSPAP).

7. To assign responsibility to the Executive Council for the IOC Working Group on Legal Questions Related to Scientific Investigations of the Ocean.

Further decides to seek to arrange for special relationships, as appropriate, between these Standing Committees and other organizations within the United Nations system referred to in Article 1. 3 of the Statutes as amended by the sixteenth session of the General Conference of Unesco, bearing in mind Articles 6 and 12 of the amended Statutes,

Instructs CSI and CSS to examine, at their first meeting, the terms of reference and composition of the subsidiary bodies assigned to them, with a view to reducing further the number of subsidiary bodies, and to recommend to the Executive Council which subsidiary bodies should be discharged or merged and which reconstituted either in their terms of reference or in their composition,

Calls upon the Executive Council to:

1. Take promptly the appropriate action on such recommendations,

2. Keep under constant review the activities of the Standing Committees with a view to recommending to the first ordinary session of the Assembly any changes which might be required in their terms of reference or activities,

3. Take appropriate action on administrative, financial and legal questions which may arise,

Requests all Member States to inform the Secretary of their representatives on each Standing Committee in which they wish to participate,

Invites each Standing Committee to elect its own Chairman and Vice-Chairman, considering the qualifications of the individuals in question in the light of the terms of reference of the Standing Committee concerned, and not excluding the possibility that such office may be held by one or other of the Vice-Chairmen of the Commission,

Requests the Chairman of the Commission to designate promptly a temporary Convenor for each Standing Committee to organize its work in co-operation with the Secretary until such elections are held,

Invites the Second, Third and Fourth Vice-Chairmen of the Commission (as designated by the Executive Council) to serve in a liaison capacity between the Executive Council and the respective Standing Committees, in particular by advising the Standing Committee on decisions taken by the Assembly and the Executive Council, and assisting the Chairman of a Standing Committee in presenting its recommendations to the Assembly and Executive Council,

Instructs the subsidiary bodies assigned to CSI and CSS to report promptly to these Standing Committees on their work,

Directs each subsidiary body to continue its work under its present terms of reference until the Executive Council has acted upon the recommendations of CSI and CSS, and thereafter if not discharged to continue its work under the modified terms of reference and the instructions and guidance of the appropriate Standing Committee,

Instructs the Secretary to arrange for necessary support for sessions of the Standing Committees and subsidiary bodies, as appropriate, either through ICSPRO or directly with organizations concerned with the subject or with Member States prepared to host such sessions,

Requests the Chairmen of the Standing Committees to assist the Chairman of the Commission in his meetings with ICSPRO to harmonize the support required by the Standing Committees and subsidiary bodies, as well as the programmes of the Standing Committees and subsidiary bodies and of the organizations whose executive heads are represented in ICSPRO,

Instructs the Secretary to circulate promptly the reports of the Standing Committees to all Member States, to the organizations whose executive heads are represented in ICSPRO, to the advisory bodies, and to other organizations invited to participate in the work of the Commission,

Decides to convene the Standing Committees as follows:

1. Each Standing Committee shall meet at least once during the period between ordinary sessions of the Assembly, and if the need arises on the decision of the Executive Council;

2. CSI and CSS shall meet concurrently at least once during such period;

3. MATE shall normally meet immediately prior to the second ordinary session of the Executive Council during each such period;

4a. The first week of the ordinary sessions of the Assembly shall be exclusively devoted to meetings of the Standing Committees, which shall review all of their work since the previous Assembly as well as the work of subsidiary bodies assigned to them; shall examine any other matter on the agenda for the Assembly which falls within their terms of reference. They shall

formulate concise recommendations, proposals or options for the consideration of the plenary meetings of the Assembly;

4b. An Assembly Committee on administrative, financial and legal matters (ACAFL) shall meet concurrently to examine such matters on the agenda of the Assembly and shall similarly formulate concise recommendations, proposals or options for the consideration of the plenary meetings of the Assembly;

4c. No more than two such Committees shall meet at any one time,

Recommends to the first ordinary session of the Assembly that it review, in the light of experience, the above decisions, and make any adjustments which might prove necessary.

ATTACHMENT

TERMS OF REFERENCE OF THE STANDING COMMITTEES

Standing Committee on Scientific Investigations (CSI)

1. Under the direction of the Assembly and the Executive Council to elaborate and implement long-term scientific policy and programmes;

2. To recommend to the Assembly or the Executive Committee the creation of such subsidiary bodies as may be deemed necessary;

3. To keep under review the implementation of programmes undertaken by such subsidiary bodies as may be established;

4. To encourage the widest degree of participation in the implementation of programmes by directors of government laboratories and institutions, and by scientists, particularly from countries less advanced in the marine sciences, both in the subsidiary bodies and in carrying out projects;

5. To invite the participation of the organizations whose executive heads are represented in ICSPRO, advisory bodies, and other organizations in the implementation of the programmes;

6. To report regularly to the Assembly and the Executive Council on the progress achieved by the Committee.

Standing Committee on Scientific Services (CSS)

1. Under the direction of the Assembly and the Executive Council to elaborate and implement all basic requirements for service programmes;

2. To recommend to the Assembly or the Executive Committee the creation of such subsidiary bodies as may be deemed necessary;

3. To co-ordinate and review the work undertaken by such subsidiary bodies as may be established;

4. To co-ordinate the exchange of data and information among Member States and with international organizations and bodies;

5. To encourage the widest degree of participation in the implementation of programmes by directors of government laboratories and institutions, and by scientists, particularly from countries less advanced in the marine sciences, both in the subsidiary bodies and in carrying out projects;

6. To report regularly to the Assembly and Executive Council on the progress achieved by the Committee.

Standing Committee on Mutual Assistance, Training and Education (MATE)

1. To ascertain the requirements of Member States for mutual assistance, training and education programmes in the marine sciences;

2. To evaluate these requirements and to recommend to the Assembly and the Executive Council actions, especially the establishment of programmes, which should be taken to meet these requirements;

3. To recommend to the Assembly and the Executive Council the methods and procedures by which these actions and programmes should be implemented and the way in which they should be co-ordinated with other activities of the Commission and with activities of other international organizations, Member States, and scientific bodies;

4. After the programmes noted above have been implemented:

   (i) to review and evaluate these programmes to determine whether these programmes are meeting the requirements for which they were established and

   (ii) to recommend, if necessary, revisions in the programmes,

5. To work with the Secretariat to aid Member States in improving their national programmes in mutual assistance, training and education by assisting these States in the preparation of proposals to the UNDP and other sources of financial support, and

6. To ensure that Member States are fully informed of the activities of international organizations, Member States, and scientific bodies and institutions in mutual assistance, training and education, by publishing and disseminating appropriate information documents.

RESOLUTION VII-16

BUDGET AND STAFF FOR 1973-74

The Intergovernmental Oceanographic Commission,

Noting with satisfaction the implementation of resolution VI-5 on Unesco's 1971/72 programme in Oceanography by the Director-General of Unesco,

Recognizing the growing scope of oceanographic activities within United Nations organizations, and the pressing need for increased resources to support these activities,

Recalling Recommendation 12.17 of the 12th meeting of the Bureau with the Consultative Council, held at Bordeaux, March 1971, in which the growing responsibilities of Unesco in Oceanography are recognized and the Director-General of Unesco is invited to do his best to consider this and other factors in his evaluation of priorities within his programme of work and budget proposals for 1973-74,

Expressing its appreciation to the Director-General for his support and counsel and especially for his statement contained in document SC/IOC-VII/43 Add. 1 - Secretariat Services for the Commission - Observations by the Director-General - that he considers that Unesco's support of the Commission in 1973-74 should be increased substantially beyond the level of the current biennium,

Requests the Director-General to continue to give all reasonable priority to establishing a level of support for the Commission and for the other oceanographic activities of Unesco commensurate with the urgency and importance of their programmes in marine science and education, and encourages him to submit a proposal in the sense of his observation in document SC/IOC-VII/43 Add. 1 to the seventeenth session of the General Conference of Unesco,

Further requests the Director-General to apply any reductions in the current Unesco budget during 1972 on a selective basis, recognizing in doing so the urgency and importance of the Commission's and Unesco's oceanographic programmes,

Noting further the statements made by the representatives of the other organizations whose executive heads participate in ICSPRO, concerning the form and scope of their support of the work of the Commission and of its Secretariat,

Requests the executive heads of these organizations to bear in mind the pressing need for increased support if the Commission is to play its proper rôle in fields relevant to their own programmes, and to work towards a substantial augmentation of their contributions,

Urges Member States to give all possible support during the seventeenth session of the General Conference of Unesco, and during forthcoming sessions of the governing bodies of other organizations whose executive heads participate in ICSPRO, to proposals for increased staff and financial resources in support of the Commission's work.

RESOLUTION VII-17

SECRETARIAT SERVICES FOR THE COMMISSION

The Intergovernmental Oceanographic Commission,

Aware of the difficulty of meeting the Commission's aims and purposes with the limited resources available to the Secretariat,

Being convinced of the need to increase the size and efficiency of the Secretariat,

Considering that the Chairman of the Commission, at the request of the Consultative Council, in co-operation with the Director-General of Unesco, has presented to the Commission a first assessment of the existing problems and possible solutions,

Considering further the views on this matter presented to the Commission by the Director-General,

Bearing in mind the organic relationship between the activities of the Commission and Unesco's oceanographic programme, as well as between present and future activities and duties of the Commission and those of the other agencies which co-operate through ICSPRO,

Noting that the discharge of the Commission's statutory duties of promoting scientific research in the oceans is considered more and more as of importance by other agencies of the UN system for the better discharge of their own responsibilities regarding the oceans and which, thereby, can look upon the Commission as constituting a specialized part of their own machinery,

Noting also that the Commission may be called upon not only to act as the co-ordinating body for LEPOR, but also to promote the development of co-operative scientific and scientific service activities in marine pollution and to undertake additional tasks specified in the report of the IWG on Monitoring or Surveillance, the second session of which will start in Ottawa on 8 November 1971, and finally,

Taking into account resolution VII-22 concerning GIPME, resolution VII-16 concerning Budget and Staff for 1973-74, and resolution VII-13 concerning the effectiveness of the Commission's work:

1. Requests the Director-General of Unesco, in accordance with the views he has presented to the Commission in paragraph 2 (a) and (b) of his letter SC/IOC-VII/43 Add. 1 - subject to endorsement by the Unesco Executive Board - to initiate the necessary administrative decisions to reorganize the Secretariat of the Commission and the Unesco Office of Oceanography as separate entities with the Secretary of the Commission reporting directly to him;

2. Requests the Chairman of the Commission, together with the Director-General of Unesco and the executive heads of the other agencies which co-operate through ICSPRO, and with the assistance of the Secretary, to prepare and present to the first session of the Executive Council: a study of ways and means of increasing the **size** and efficiency of the Secretariat, containing, inter alia:

   (a) an assessment of the difficulties at present facing the Secretariat with regard to finance, staff and facilities as provided by Unesco and other organizations whose executive heads participate in ICSPRO,

   (b) an appraisal of possible solutions for this problem, including an assessment of the advantages and disadvantages of changing the location of the Secretariat of the Commission,

   (c) an assessment of the financial, administrative and personnel consequences for Unesco as well as for the other organizations which co-operate through ICSPRO of such change in location,

3. Instructs the Executive Council to make comprehensive recommendations for consideration and final decision by the Assembly.

RESOLUTION VII-18

CO-OPERATIVE INVESTIGATIONS OF THE CARIBBEAN AND ADJACENT REGIONS

The Intergovernmental Oceanographic Commission,

Noting that the International Co-ordination Group for CICAR held an extraordinary session on 2 November 1971 in Paris,

Noting also the adoption by this Group of the Summary Report of the fourth session of ICG for CICAR (Trinidad and Tobago, 29 March - 3 April 1971), with the exception of Recommendations 4. 27 and 4. 34 "Conduct of Oceanographic Expeditions in waters under the jurisdiction of coastal states" (doc. SC/IOC-VII/21, Annex III),

Considering the long-term prospects of CICAR outlined briefly in Recommendation 4. 6 of the Group and also the considerable value that would ensue from an Operations Analysis, proposed in Recommendation 4. 5 of the Group (doc. SC/IOC-VII/21, Annex III),

Adopts the Summary Report of the fourth session of the ICG for CICAR with the exception of Recommendations 4. 27 and 4. 34 and also the Summary Report of the extraordinary session of the ICG held on 2 November 1971,

Requests the ICG for CICAR at its fifth session to consider the desirability of extending the period of the CICAR until at least 31 December 1973,

Believing that it is highly desirable to arrange for continued co-ordination of oceanographic activities in the CICAR area, after the completion of the CICAR programme,

Requests the ICG for CICAR, at its fifth session, (i) to study the mechanisms needed to ensure that such co-ordination will be effective, and to present its findings to the Executive Council at its earliest convenience; and (ii) to discuss the preliminary results of the scientific investigations carried out by the countries participating in CICAR and to prepare a paper for consideration by the working party formed to carry out the Operations Analysis referred to in Recommendation 4. 5 of the ICG,

Instructs the Secretary to investigate the ways and means by which an Operations Analysis of the CICAR programme can be carried out, and to implement such an analysis in whatever form appears most practicable and is most likely to ensure that future co-operative enterprises may benefit and be as worthwhile as possible, particularly to the developing countries in the area.

RESOLUTION VII-19

CO-OPERATIVE INVESTIGATIONS OF THE MEDITERRANEAN (CIM)

The Intergovernmental Oceanographic Commission,

Considering that the basic structures of the Co-operative Investigations of the Mediterranean, as a joint exercise sponsored by the Commission, the General Fisheries Council for the Mediterranean (GFCM) of FAO, and the International Commission for the Scientific Exploration of the Mediterranean (ICSEM), are established by resolution V-4 of the IOC,

Considering that the International Group for Scientific Co-ordination of CIM, created by this resolution has established a research programme for CIM, published in CIM Newsletter N° 1,

Considering that the Operational Unit has been established in Monaco to assist the International Co-ordinator in the fulfillment of his tasks,

Considering that the project of the Scientific Operational Programme for CIM has been prepared and published in CIM Newsletter N° 2,

Considering that this document constitutes the scientific basis for all CIM activities, in which it is necessary to have some priorities, taking into account the existence of on-going projects in marine pollution and related fields, such as the establishment by ICSEM of the Adriatic Sea Expanded Regional Oceanological Studies (AS-EROS, Italy, Yugoslavia) and the Regional Pollution Studies in the Ligurian Sea (RAMOGE - France, Italy, Monaco),

Being informed that several of those IOC Member States participating in CIM have not as yet appointed a National Correspondent,

Being also informed of the scarcity of response to these projects of the Scientific Operational Programme from participating Member States,

Urges these countries to appoint National Co-ordinators, one for each participating Member State, eventually assisted by associate scientific experts, to replace their National Correspondents, so that each Co-ordinator be entrusted with enough responsibility in his country to accomplish his task,

Recommends to the GTC to provide for a meeting of the International Co-ordinator, the Assistant International Co-ordinators for Fisheries Aspects and Marine Pollution of CIM and the National Co-ordinators, to study CIM programme co-ordination and implementation,

Recommends to the International Co-ordinator that he ensure that priority be given in the operational programme for CIM to themes of particular importance and to those offering in the existing conditions the best chances for a favourable result, such as in the field of marine pollution, in which precise programmes have to be prepared including an evaluation of the capacities of Mediterranean laboratories and a proposal for the implementation of a monitoring system; that priority be also given to regional, or multilateral agreements for the study of particular problems,

Urges participating Member States to support effectively the implementation of the above-mentioned programme for CIM.

RESOLUTION VII-20

CO-OPERATIVE INVESTIGATIONS OF THE NORTHERN PART OF THE EASTERN CENTRAL ATLANTIC (CINECA)

The Intergovernmental Oceanographic Commission,

Recognizing progress made in the preparation of CINECA multi-ship surveys which are to be undertaken in February and August 1973,

Taking note of Recommendation CINECA N° 6 concerning the establishment of a Synoptic Sea Surface Temperature project at Casablanca,

Urges countries participating in CINECA according to Recommendation CINECA N° 6:

(a) to make research ships available for the multi-ship surveys and give firm commitments before January 1972 concerning their participation;

(b) to take steps in order to provide the project with data on sea surface temperature collected on board vessels operating in the area or by satellites or other remote sensing systems.

RESOLUTION VII-21

NORTH ATLANTIC INVESTIGATIONS

The Intergovernmental Oceanographic Commission,

Bearing in mind the Commission's decision to join with ICES and ICNAF in a co-ordinating group for the North Atlantic,

Noting that the third operative paragraph of resolution V-13 was not accepted by ICES and ICNAF, so that the resolution has not been fully implemented,

Noting the reports of the IOC/ICES/ICNAF Co-ordinating Group for the North Atlantic,

Endorses the need for understanding the dynamics of the North Atlantic Ocean,

Desires that the inter-secretariat group should continue its work,

Considering that the present and planned investigations being co-ordinated by the IOC, ICES, ICNAF, WMO, ACMRR and SCOR including CICAR, CINECA, the Greenland-Iceland and Scotland overflow studies, the Georges Bank survey, Geotraverses, MODE, Geochemical Section Studies (GEOSECS) and the IGOSS Pilot Project, when viewed together, constitute an effort of major proportions directed towards a large-scale study of the North Atlantic Ocean,

Recognizing the need for strengthening the lines of communication between the many programmes and the need for ensuring effective exchange of data, information and progress reports,

Desiring that close operational contact be kept between the different projects in the Atlantic Ocean and its adjacent seas, north of the Equator,

Requests the IOC/ICES/ICNAF Co-ordinating Group to meet periodically with the International Co-ordinators for CICAR, CINECA, CIM, the Chairman of the Working Committee for IGOSS and the project director for MODE to review the work in progress in the Atlantic Ocean, consider eventual needs for co-ordination between the different projects and keep the IOC, ICES and ICNAF informed.

RESOLUTION VII-22

GLOBAL INVESTIGATION OF POLLUTION IN THE MARINE ENVIRONMENT

The Intergovernmental Oceanographic Commission,

Noting Recommendation 12.5 of the 12th Meeting of the Bureau with the Consultative Council, and the urgent request for pertinent advice from the Intergovernmental Working Groups on Marine Pollution and on Monitoring or Surveillance of the Preparatory Committee for the United Nations Conference on the Human Environment,

Having studied the report of the ACMRR/SCOR/ACOMR/GESAMP Joint Working Party on Global Investigation of Pollution in the Marine Environment (GIPME),

Accepts this Report and thanks the participants in the Joint Working Party for their work on behalf of the Commission,

Decides, on the basis of the criteria adopted in resolution VII-6 to establish the Global Investigation of Pollution in the Marine Environment as one of the major projects in the acceleration phase (IDOE) of LEPOR to be organized and co-ordinated by IOC in co-operation with the organizations whose executive heads participate in ICSPRO and with other appropriate bodies,

Requests the Member States and scientific advisory bodies, together with GESAMP, to start to implement those recommendations in the Report of the Joint Working Party which are directed to them,

Instructs the IOC Secretariat to take the necessary steps to implement the other recommendations in that Report,

Emphasizes as a matter of urgency that prompt and full implementation of the recommendations can be achieved only with additional funds for the IOC Secretariat and the scientific advisory bodies,

Estimates that as a minimum during the first years this will require two professional staff with secretarial support and $100,000 per annum, and that more may be required as the co-ordination effort necessarily increases, and accordingly

Instructs the Chairman to submit the above proposal to the organizations whose executive heads participate in ICSPRO with a view to a request being submitted to the Secretary-General of the United Nations Conference on the Human Environment on the need for additional financing and increase in staff, as well as for further financial support for the scientific advisory bodies in order to accelerate the development of GIPME; and

Instructs the Executive Council, in consultation with the Commission's scientific advisory bodies, the organizations whose executive heads participate in ICSPRO and with other organizations concerned, to establish an International Co-ordination Group for GIPME, taking into account the suggestions made by the Joint Working Party with regard to the desirability of including among the representatives on such a Group chief scientists of the laboratories which will participate in the Global Investigation. In establishing the co-ordination group, provision should be made for co-operation with organizations carrying out investigations or monitoring activities relevant to GIPME.

RESOLUTION VII-23

BATHY PILOT PROJECT

The Intergovernmental Oceanographic Commission

Noting the approval given by the third joint session of the IGOSS Working Committee and the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs to the proposal for launching a bathythermograph pilot project, and the endorsement given to the project by the IOC Bureau and Consultative Council in their Recommendation 12. 13 and by the WMO Executive Committee,

Noting that the WMO Executive Committee has urged Members of WMO to make their GTS facilities available for the exchange of bathythermograph information,

Noting further that relatively few Member States have reacted to the request by the IOC Secretariat in Circular Letter 325 calling on Member States to indicate their interest and participation in the IGOSS Pilot Project,

Recognizing that the adoption by the Commission and WMO of the BATHY and TESAC Code forms for implementation on 1 January 1972 should permit the BATHY Pilot Project to test and evaluate the related systems, and

Aware that a provisional operational plan is being provided for use and guidance of Member States,

Invites renewed attention of Member States to the above-mentioned Circular Letter and urges them to consider further ways and means of developing the BATHY Pilot Project on a local, regional, or ocean basin scale, on a national, bilateral or multilateral basis,

Invites FAO to bring the merits of the Pilot Project to the attention of the fishery interests of its Members,

Urges WMO to draw again the attention of its Members to the usefulness of the BATHY Pilot Project for meteorological purposes.

RESOLUTION VII-24

INTEGRATED GLOBAL OCEAN STATION SYSTEM

The Intergovernmental Oceanographic Commission,

Recalling its resolution VI-7 which adopted the General Plan and Implementation Programme of IGOSS for Phase I and requested an intensification of effort by respective IOC and WMO bodies and by governments in the implementation of Phase I of IGOSS,

Noting with appreciation the progress made by the Working Committee for IGOSS and through its joint meetings with the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs, and by the joint IOC/WMO groups of experts and IOC groups active in the planning and development of IGOSS,

Considering Recommendation 12. 13 of the IOC Bureau and the Consultative Council which (a) recognized the important rôle of IGOSS as a service system in the implementation and development of the Expanded Programme and urged the interrelation of IGOSS with co-operative investigations, (b) welcomed the initiation of a pilot project for collection, exchange and evaluation of bathythermograph data, (c) endorsed and recommended changes in the subsidiary structure and terms of reference of groups working on the planning and development of IGOSS,

Noting with appreciation resolution 11 adopted by the 6th Congress of WMO encouraging continuing joint action between the Commission and WMO concerning all activities related to the planning and implementation of IGOSS,

Noting Recommendation 20 of the first session of the Intergovernmental Working Group on Monitoring or Surveillance of the Preparatory Committee for the UN Conference on the Human Environment, which urged the rapid implementation of IGOSS and recognized this as a basis for a logical system for the planning and co-ordination of oceanographic monitoring programmes,

Endorses the present goals for further development of IGOSS, annexed to this resolution, as taken from Annex IX of the Summary Report of the third joint session of the Working Committee for IGOSS and the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs (doc. SC/IOC-VII/29),

Urges all Members to take additional and appropriate steps to enable them to participate fully in the IGOSS BATHY pilot project (resolution VII-23) and subsequently in the on-going operational services programme,

Calls upon Unesco, WMO and other agencies whose executive heads participate in ICSPRO to provide adequate support to the Commission in the planning and implementation of Phase II of IGOSS,

Instructs the Secretary, in co-operation with WMO, to complete and distribute widely the IGOSS Prospectus at the earliest date practicable,

Approves the report of the third session of the Working Committee for IGOSS (doc. SC/IOC-VII/30) and the report of the third joint session of the Working Committee for IGOSS and the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs (doc. SC/IOC-VII/29) including, inter alia, enlarging the Group of Experts on Oceanographic Research as it relates to IGOSS with three additional members selected by the Chairman of the group in consultation with the Secretary of the Commission, taking into account the principle of geographical distribution,

Endorses the dissolution of the joint IOC/WMO Group of Experts on Co-ordination of Requirements, expressing appreciation for the valuable work they accomplished,

Decides to amend the Terms of Reference of the Working Committee for IGOSS, as given in resolution V-20, by replacing paragraphs (i) and (ii) under: "Authorizes the Working Committee", as follows:

(i) to plan and co-ordinate an IOC programme for IGOSS of oceanographic studies and services in oceanic areas, both within the Commission and, where appropriate, in conjunction with the World Weather Watch of WMO; this work may be carried out either by the Working Committee in joint meetings with the WMO Executive Committee Panel on Meteorological Aspects of Ocean Affairs or on its behalf by the Joint IOC/WMO Planning Group for IGOSS (Terms of Reference: Annex III to doc. SC/IOC-VII/29);

(ii) to act as the Commission's authority for the discharge of its responsibility for the IGOSS work of the Joint IOC/WMO Group of Experts on IGOSS Technical Systems Design and Development and Service Requirements (Annex V to doc. SC/IOC-VII/29); the Group of Experts on Oceanographic Research as it relates to IGOSS (Annex VII in doc. SC/IOC-VII/30); the Joint IOC/WMO Group of Experts on Telecommunications (resolution V-20 B); and the Working Group on International Oceanographic Data Exchange (resolution V-20 A).

ANNEX TO RESOLUTION VII-24

PRESENT GOALS FOR FURTHER DEVELOPMENT OF IGOSS

PHASE I (1970-1971)

Development , acceptance and employment of oceanographic data codes ;

Commencement of data exchange via the GTS of the WWW, at least for an ocean basin or region ;

Establish or expand and co-ordinate the ship-of-opportunity programme for employment of XBT's ;

Experimental product generation projects on national or bilateral basis ;

Research to include studies resulting in specification of "first approximation" scales and processes to be used in designing initial pilot projects for experimental product generation.

PHASE IIa (1972-1973)

Complete objectives of Phase I ;

Identify products for user applications (world wide) ;

Identify data processing centres (national or regional) to be involved in IGOSS product formulation or services rôle ;

Research to identify ocean processes and the criteria for measuring and monitoring such processes in order to operate dynamic models required for forecasting the physical and chemical states and, as feasible, the biological phenomena of the ocean on an operational basis.

PHASE IIb (1974-1975)

Incorporate new data acquisition technology and system components (e. g. buoys) ;

Incorporate automated system components in ships ;

Continue supporting research as indicated under Phase IIa in order to refine both the dynamic models and the criteria for monitoring the oceans for the prediction services programme.

NOTE : the time schedules are to be encouraging and not restricting.

RESOLUTION VII-25

OCEANIC DATA MANAGEMENT

The Intergovernmental Oceanographic Commission,

Considering that the effective international exchange of oceanographic data is essential for international co-operation in the study of the nature and resources of the oceans,

Noting that the system for the international exchange of oceanographic data through World Data Centres (oceanography) that has been in operation for over ten years has demonstrated its viability and requires no fundamental changes,

Noting also the contribution to international data management made by the specialized and regional data centres,

Considering that the volume of data is going to increase considerably in the next few years in consequence of the use of new means of measuring oceanographic parameters, and the expanding activities of LEPOR,

Noting the discussion and emphasis given to data and information management by the GELTSPAP (doc. SC/IOC-VII/11),

Noting with appreciation the progress made by the Working Group on International Oceanographic Data Exchange as is presented in the reports of its fifth and sixth sessions (doc. SC/IOC-VII/31 and 32),

Considering the steps taken by the Working Group:

(a) to develop a marine data inventory (ROSCOP) programme in order to maintain and make available a ready appraisal of oceanographic data being collected, including biological and pollution data,

(b) to prepare a revision of the IOC "Manual on International Oceanographic Data Exchange" and a "Manual on IGOSS Data Archiving and Exchange",

(c) to undertake consideration of the interdisciplinary and inter-organizational implications inherent in data and information management in such areas as air-sea interaction, marine resources, marine pollution, and recreation and safety,

Approves the recommendations made by the Working Group in the reports of its fifth and sixth sessions (doc. SC/IOC-VII/31 and 32),

Calls upon the Secretary to report to the Executive Council and to the Working Group (on Data Exchange) the results of negotiations concerning the establishment of a Joint Task Team on Interdisciplinary and Inter-organizational Data and Information Management and Referral,

Accepting Recommendation 12.12 of the Bureau and the Consultative Council (doc. SC/IOC-VII/8),

Requests SCOR and ECOR in consultation with FAGS to review the requirements for mean sea-level data as compiled and made available by the Permanent Service for Mean Sea Level (PSMSL), and to transmit their findings to the Executive Council for further review and appropriate action,

Decides, with a view to improving and increasing the effectiveness of the present system for the international exchange of oceanographic data:

(a) to request Member States and organizations responsible for the operation of the World Data Centres (Oceanography) A and B and of the regional and specialized data centres as well as those countries having national oceanographic data centres to take such action as is necessary to cope with the impending increase in the input of data;

(b) to adopt the interim standard international data inventory form (ROSCOP) for the submission of information on expeditions that have been carried out in accordance with the Declared National Programmes and programmes of international co-operative research;

(c) to request the Working Group on International Oceanographic Data Exchange to prepare as expeditiously as possible compatible formats for the international exchange of oceanographic data, and to keep under review the arrangements for international data exchange with a view toward achieving ultimately standard forms for conventional data;

(d) to request Member States to submit their Declared National Programmes and data for exchange through the World Data Centres (Oceanography) or other appropriate international data centres;

(e) to refer the contents of the "Brief Instructions for Filling in the Unified Form for Results of Oceanographic Research" (doc. SC/IOC-VII/32 Add. 1) to the Working Group on International Oceanographic Data Exchange for consideration at its next meeting.

RESOLUTION VII-26

WMO TECHNICAL CONFERENCE ON THE MEANS OF ACQUISITION AND COMMUNICATION OF OCEAN DATA

The Intergovernmental Oceanographic Commission,

Having noted with appreciation the invitation of the WMO Executive Council to the Commission and other international organizations concerned with ocean projects to participate in the WMO Technical Conference,

Approves Recommendation 12. 3 of the Bureau and Consultative Council which called upon the Secretary to negotiate with WMO, with a view to ensuring adequate participation in the Conference by experts involved in related oceanographic programmes and studies,

Having noted the arrangements being made by the Planning Committee for the Conference and the Commission's rôle in the planning,

Instructs the Secretary to encourage presentations of oceanographic interest in the following ways:

(a) to disseminate to IOC Member States the information regarding the Conference which will be prepared by WMO;

(b) to encourage presentations of oceanographic interest within the scope of the Conference:

(1) by experts of Member States on subjects of interest to IGOSS;

(2) by the Chairman of the Working Committee for IGOSS on observational requirements of IGOSS;

(c) to take steps that will facilitate the participation of oceanographic experts in the Conference;

(d) to make available to the Conference documentation germane to its objectives, such as the new IOC document "ODAS of the World", on the explicit understanding that documentation to the Conference will be kept to a strict minimum compatible with the aims of the Conference.

RESOLUTION VII-27

MONITORING MARINE POLLUTION

The Intergovernmental Oceanographic Commission,

Noting the discussion concerning a programme of monitoring marine pollution as given in the report of the first session of GELTSPAP (doc. SC/IOC-VII/11),

Recognizing that a detailed study must be made to identify more precisely the elements of a desirable and feasible marine pollution monitoring system.

Accepting Recommendation 12.5 of the 12th Meeting of the Bureau and the Consultative Council (doc. SC/IOC-VII/8),

Noting with appreciation and accepting the report of the Joint Working Party (ACMRR/SCOR/ACOMR/GESAMP) on the Global Investigation of Pollution in the Marine Environment (GIPME) and, particularly in this instance, the discussion concerning the nature of a monitoring system (document SC/IOC-VII/27, Annex III),

Noting also the report of the first session of the Intergovernmental Working Group on Monitoring or Surveillance of the Preparatory Committee for the UN Conference on the Human Environment (UN doc. A/CONF.48/IWGM.I/8) which:

(a) provides a definition for monitoring as "a system of continued observation, measurement and evaluation for defined purposes",

(b) along with the Intergovernmental Working Group on Marine Pollution, requested the Commission to consider, in conjunction with its supporting Agencies, what arrangements would be required to permit the Commission to promote the development of co-operative scientific and scientific support activities in marine pollution (doc. SC/IOC-VII/27),

(c) urges the rapid implementation of the Phase I of IGOSS and recognizes this system as a basis for a logical system for the planning and co-ordination of oceanographic monitoring programmes,

Recognizing that the establishment of a pollution monitoring programme can be developed as a function of IGOSS as far as physical and some chemical properties are concerned, and that the research to be undertaken within GIPME will show how monitoring for other chemical and biological aspects can be developed,

Noting the decision of the 6th Congress of WMO regarding WMO's participation in the work relating to GIPME and its encouragement to members to support that investigation through relevant observing systems acting in support of IGOSS which, it noted, was expected to constitute a basic monitoring component of GIPME,

Recognizing that, through its special relationship with the organizations whose executive heads participate in ICSPRO, the Commission is emerging as a common instrument for discharging certain of its responsibilities in the field of marine science and related science services,

Considers that the Commission is the appropriate body in the UN System to lead in promoting, planning and co-ordinating the marine pollution monitoring programme, with the close collaboration of agencies whose executive heads participate in ICSPRO or of IAEA,

Requests the Executive Council to keep under review the progress and results of research on marine pollution and, when appropriate, to decide how marine pollution monitoring shall be handled within the Commission,

Instructs the Secretary to communicate this resolution to the Secretary-General of the UN Conference on the Human Environment and in response to his request (doc. SC/IOC-VII/INF-178) to notify him that the Commission is prepared to undertake in due course the development of an appropriate marine pollution programme and that it will work in close collaboration with other interested agencies.

RESOLUTION VII-28

TSUNAMI WARNING SYSTEM

The Intergovernmental Oceanographic Commission,

Taking into account Recommendations 1, 2 and 5 of the second session of the International Co-ordination Group for the Tsunami Warning System in the Pacific (doc. SC/IOC-VII/26),

Requests Unesco and the UNDP to give favourable consideration to requests by Member States of the Group, particularly developing countries with long coastlines or subject to danger from tsunamis, for the establishment of adequate communications facilities for international alert stations, when necessary, and national warning systems,

Instructs the Secretary to investigate the availability of educational material designed to provide public awareness of the dangers and protective actions that should be taken upon receipt of a tsunami warning, and to report concerning his findings to the next meeting of the International Co-ordination Group on Tsunamis for its further consideration,

Further instructs the Secretary to re-issue invitations to Member States to join the Group, and to invite other countries of the area which are members of any organization of the United Nations System and interested regional international organizations to be represented by observers at future meetings of the International Co-ordination Group,

Requests the Secretary to take appropriate steps to resolve with the Chairman of the ICG and the Chairman of the Joint IOC/WMO Group of Experts on Telecommunication, the questions concerning requirements for use of the HF radio frequency bands allocated by WARC, 1967,

Approves the Summary Report of the second session of the International Co-ordination Group for the Tsunami Warning System in the Pacific.

RESOLUTION VII-29

OCEAN DATA ACQUISITION SYSTEMS (ODAS)

The Intergovernmental Oceanographic Commission,

Having considered the report of the fourth session of the IOC Group of Experts on the Legal Status of Ocean Data Acquisition Systems (ODAS),

Takes note of this report,

Welcomes resolution 2.344(d) adopted by the sixteenth session of the General Conference of Unesco, decision 4.3.2 adopted by the Executive Board of Unesco at its 87th session, and resolution A.243(VII) of the Assembly of IMCO concerning the convening of a joint Unesco-IMCO Preparatory Conference of governmental experts to formulate a draft convention on the legal status of ocean data acquisition systems (ODAS),

Approves the measures taken for the circulation to interested governments of the preliminary draft convention and its technical annexes, the comments of governments concerning them, as well as the documentation listed in Recommendation 3 of the Group of Experts, and transmits the draft convention as a working document of the Commission to the Preparatory Conference,

Noting that action following the Preparatory Conference will depend on decisions by Unesco and IMCO,

Recognizing that the Group of Experts and the Secretary have fulfilled their tasks as outlined in resolution V-20 E and resolution VI-14 and Recommendations 11.11, 11.12, 11.13 and 11.14,

Offers to all members of the Group the sincere thanks of the Commission for their expertise and excellent work and declares that the Group is hereby dissolved,

Instructs the Secretary to give his support to Unesco and IMCO for the Preparatory Conference and to inform the Commission about the results of this Conference, as well as about the action which will be taken thereafter by Unesco and IMCO,

Requests the Director-General of Unesco to support the Preparatory Conference from the funds allocated for the promotion of the general advancement of oceanography, and not from the funds allocated for the IOC and its activities in 1972.

RESOLUTION VII-30

LEGAL QUESTIONS RELATED TO SCIENTIFIC INVESTIGATIONS OF THE OCEANS

The Intergovernmental Oceanographic Commission,

Noting the Summary Report of the second session of the Working Group on Legal Questions Related to Scientific Investigations of the Ocean,

Noting that the Enlarged Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor beyond the limits of National Jurisdiction has been entrusted with the task of dealing with problems concerning scientific research in the oceans within the framework of the preparation of the Conference on the Law of the Sea,

Confirms the provisions of resolution VI-13, adopted at the sixth session,

Approves the provisional guidelines proposed by the Group to facilitate the application of resolution VI-13 with respect to assistance regarding areas of national jurisdiction,

Encourages the Member Governments to conclude bilateral or regional agreements concerning research in certain areas of the oceans,

Decides that the Working Group on Legal Questions Related to Scientific Investigations of the Ocean will be convened, if the need arises, only upon decision by the Executive Council.

RESOLUTION VII-31

MUTUAL ASSISTANCE, EDUCATION AND TRAINING

The Intergovernmental Oceanographic Commission,

Having considered and accepted the report of the joint session of the IOC Working Groups on Training and Education in Marine Science and on Mutual Assistance, held in Malta in January 1971,

Having also considered Recommendation 12.16 of the Bureau and Consultative Council

Attaching great importance to training and education of marine scientists and technicians as the basis for the development of marine science research and for the effective utilization of the ocean and its resources for the benefit of all,

Considering the need for increasing public awareness of the importance of the ocean to mankind,

Considering in particular the needs of the developing countries to strengthen their scientific capabilities for the exploration and utilization of the ocean and its resources,

Recognizing the principle that Member States should take the primary initiative in developing bi-lateral and multilateral co-operation in marine science education,

And further recognizing that such training should be carried out whenever possible in the country or in the regions from which the trainees come,

Noting the diversity of training opportunities in national marine programmes and the need for strengthening and utilizing available facilities for the purpose of education and training,

Noting further the measures already undertaken by the Commission and by Unesco, in training and education in marine science,

Being concerned, however, that the overall support provided by the Commission and by Unesco for education, training and mutual assistance has been markedly insufficient,

Concludes that a number of steps must be undertaken by the Commission, its Secretariat and its Member States, as well as interested international organizations, in the two following areas: A. Immediate implementation of programmes; and B. Financial support for these programmes.

A. Immediate Implementation of Programmes

Resolves that a well-balanced programme be developed by the Commission for conducting professional training courses at different levels to prepare specialists in various fields of marine science, taking into account the global and regional research projects under the Long-Term and Expanded Programme of Oceanic Exploration and Research. This programme of training courses shall be co-ordinated when appropriate with other international organizations. A draft plan for the developing of such a programme shall be prepared by the Secretariat for distribution to the Member States of the Commission at the earliest possible date and no later than the end of the year 1972;

Requests the Secretary to study ways and means to follow up the proposal made by GELTSPAP with regard to designation of training centres;

Requests the Secretariat, with the assistance of invited experts, to compile representative examples of existing plans and programmes for teaching of marine science at different levels (including recommended curricula and lists of available texts and reference materials). This compilation shall be distributed to Member States by the end of 1972; and invites Member States to consider these documents when establishing their own system of marine science education, taking into account both national needs and international interests, as soon as possible;

Requests further the Unesco Division of Science Teaching, in collaboration with the IOC Secretariat, to develop by the second half of 1972, recommendations as to the introduction of elements of marine science into the curricula of primary and secondary schools and to make these recommendations known to Member States;

Invites the Member States to give strong support to marine museums for the purpose of research, education and public information;

Invites Unesco and FAO to utilize existing facilities for an international information storage and retrieval system on institutions for training and education in marine science. This should lead to the regular and timely publication of up-to-date directories of training facilities and opportunities;

Requests the Secretariat to urge Member States to designate, before the end of 1971, national contacts for subjects related to education and training in marine science;

Requests the international co-ordination groups on the co-operative investigations to pay special attention to the needs of developing countries participating in these investigations, especially with a view to the possibilities of sea-going education and training;

Requests the IOC subsidiary body which deals with education, training and mutual assistance to consider ways in which a network or series of regional networks involving universities and national laboratories in marine science in the developed and developing countries, could be established;

Further requests that to consider the translation of selected textbooks and manuals in marine science into languages of developing countries where the need is most urgent.

3. Financial support for these Programmes

Recommends that Member States should take advantage of existing channels in each country, through which application may be made to the United Nations and its Agencies for support and aid to training and education programmes in marine science and should assign a high priority to these applications;

Decides that in the use of the IOC Trust Fund one of the highest priorities be given to education and training in marine science;

Urges Member States to make contributions to the IOC Trust Fund;

Invites Unesco in its programme and budget for 1973/74 to increase the funds for training and education activities in marine science, both in the Regular Programme and in the Programme of Participation in the activities of Member States;

Notes with concern that in recent years very few requests have been submitted by Member States to UNDP for execution of projects in the field of education and training in marine science;

Invites and instructs the Unesco/IOC Secretariat to assist Member States in elaboration of such requests by sending special missions;

Urges Member States, in developing their requests for assistance from UNDP, to take into account the need for increasing the assistance given to marine science training and education programmes.

Instructs the Secretary to communicate this resolution to the Administration of the UNDP, and in doing so to solicit his assistance in its implementation;

Invites the other interested Agencies of the United Nations system to review their programmes of training and education in marine science for the purpose of increasing their assistance in this field.

RESOLUTION VII-32

EXTRAORDINARY SESSION OF THE ASSEMBLY

The Intergovernmental Oceanographic Commission,

Having considered the question of assuring a smooth transition from the seventh session, meeting under the present statutes and rules, to the extraordinary session of the Assembly convened under the amended statutes;

(1) Decides not to proceed with elections as provided for under the present statutes of members of the Bureau and of the Consultative Council, and instead to prolong the terms of the present members until such time as the new rules of procedure have been adopted during the extraordinary session of the Assembly, and the elections have been held under the new rules; and

(2) Recommends to the extraordinary session that it consider under the first item of its Agenda the approval of new rules of procedure, and that until such approval is obtained the extraordinary session be governed by the present rules.

RESOLUTION VII-33

FIRST ORDINARY SESSION OF THE ASSEMBLY

The Intergovernmental Oceanographic Commission,

Taking into account all views expressed by its Member States,

Decides to hold the first ordinary session of the Assembly of the Commission in the second half of 1973,

Requests the Secretary to avoid in fixing the date overlapping with other major international meetings on marine subjects and in particular any meetings associated with the Law of the Sea Conference, and also to select the date in such a way that the Commission will be able to have maximum impact on the development of the future budgets of Unesco.

RESOLUTION VII-34

MEETINGS CONCERNING THE ORGANIZATION AND ACTIVITIES OF INSTITUTES AND CENTRES OF MARINE SCIENCE RESEARCH

The Intergovernmental Oceanographic Commisson,

Considering that it should be more informed about the prosecution of marine science throughout the world,

Authorizes the Executive Council to study arrangements for the holding, during sessions of the Assembly and/or other bodies of the Commission, of meetings at which senior scientists from institutes or centres of marine science research and international co-ordinators of co-operative investigations can speak about the organization and activities of those institutes, centres, or investigations.

In carrying out this study, the Executive Council shall bear in mind that the organization of the above-mentioned meetings should not involve the Commission in additional expenditure and that they would not replace the Anton Bruun Memorial Lectures.

ANNEX VIII

FURTHER RATIONALIZATION OF THE STRUCTURE OF THE UNESCO OFFICE OF OCEANOGRAPHY AND OF THE IOC SECRETARIAT

DRAFT RESOLUTION
(session document DR. P. 1)

The Intergovernmental Oceanographic Commission,

Mindful of the need for further improvement in the future prospects of the work of the IOC Secretariat,

Bearing in mind the organic relationship between the activities of the Commission and Unesco's oceanographic programme,

Noting that collaboration between the Secretariat of IOC and the Office of Oceanography is the most highly effective means of meeting the requirements of the development of oceanographic research, and for dealing with questions of education, training and technical assistance to the developing countries, and

Considering the need to improve the structure of the IOC Secretariat and of the Office of Oceanography with due regard to the rational division of work in accordance with the main spheres of activity,

Requests the Director-General of Unesco, in accordance with resolution 4.3.2 adopted by the Executive Board of Unesco at its 82nd session, further to reorganize the structure of the IOC Secretariat and of Unesco's Office of Oceanography in such a way as

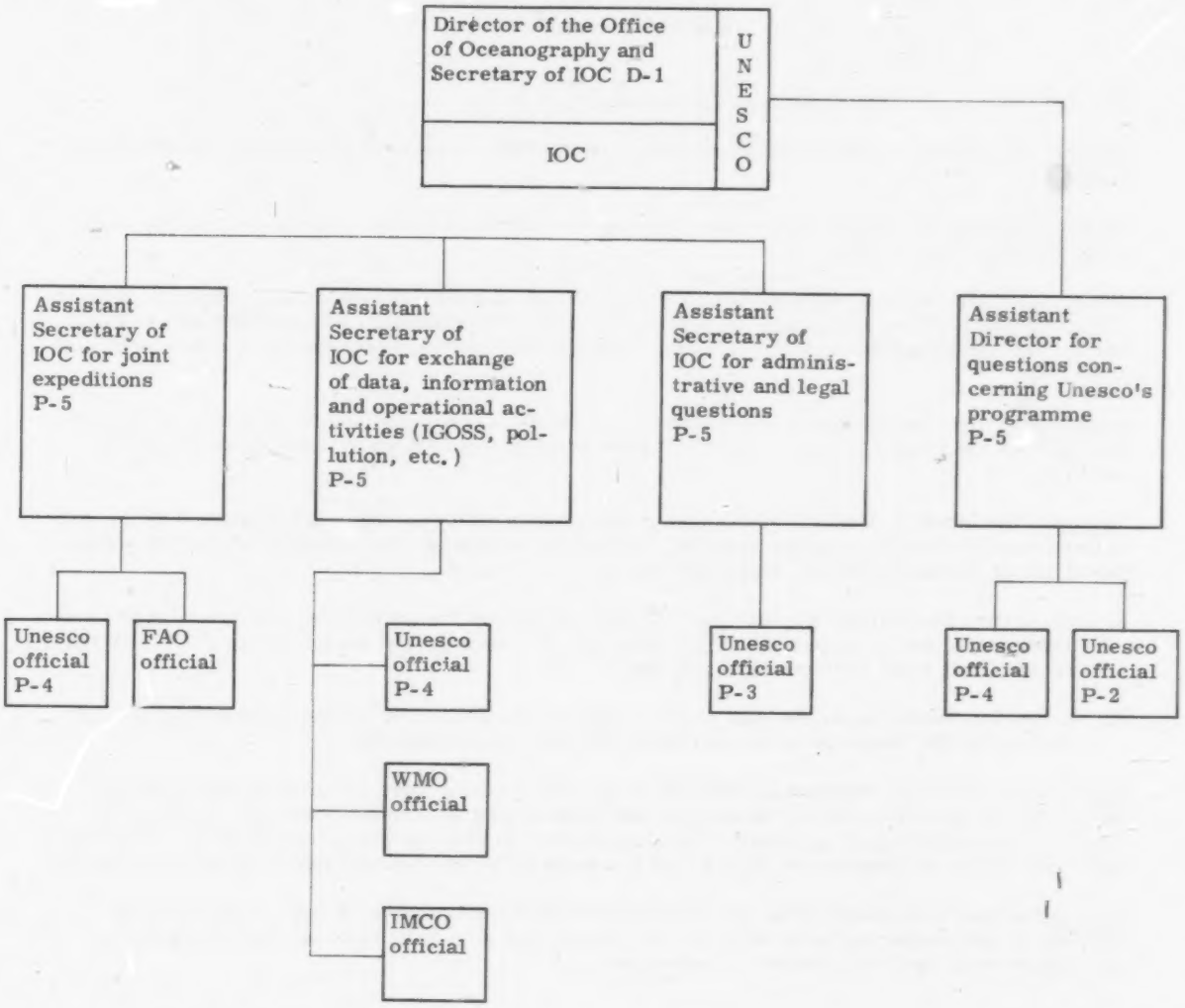
1. to confirm the position whereby the IOC Secretariat and Unesco's Office of Oceanography are under the authority of a single officer who acts at the same time as Secretary of IOC and Director of the Office of Oceanography; and

2. to provide for a clearer division of duties and responsibility for various matters between the staff of the IOC Secretariat and of Unesco's Office of Oceanography;

Requests the Director-General to take into account at the same time the considerably greater volume of secretariat services required by the Commission as compared with the servicing of Unesco's oceanographic programme, and also the need to alleviate the workload of the senior officer combining the functions of Director of Unesco's Office of Oceanography and Secretary of IOC;

Invites the Executive Heads of all organizations of the United Nations system co-operating in ICSPRO to take urgent action to staff the IOC Secretariat with their own qualified personnel in accordance with the Commission's requirements.

PROPOSED FURTHER RATIONALIZATION OF THE STRUCTURE OF UNESCO'S OFFICE OF OCEANOGRAPHY AND OF THE IOC SECRETARIAT WITHIN THE FRAMEWORK OF RESOLUTION 4.3.2 ADOPTED BY THE EXECUTIVE BOARD OF UNESCO AT ITS 82ND SESSION


Director of the Office of Oceanography and Secretary of IOC D-1
IOC
UNESCO
Assistant Secretary of IOC for joint expeditions P-5
Assistant Secretary of IOC for exchange of data, information and operational activities (IGOSS, pollution, etc.) P-5
Assistant Secretary of IOC for administrative and legal questions P-5
Assistant Director for questions concerning Unesco's programme P-5
Unesco official P-4
FAO official
Unesco official P-4
WMO official
IMCO official
Unesco official P-3
Unesco official P-4
Unesco official P-2

PROPOSED FURTHER RATIONALIZATION OF THE STRUCTURE OF UNESCO'S OFFICE OF OCEANOGRAPHY AND OF THE IOC SECRETARIAT WITHIN THE FRAMEWORK OF RESOLUTION 4.3.2 ADOPTED BY THE EXECUTIVE BOARD OF UNESCO AT ITS 82ND SESSION

Explanatory note concerning the proposed scheme

1. The scheme provides for a clear division of duties among members of the IOC Secretariat in accordance with the main spheres of activity of the Commission, leaving it to the Secretary to deal with matters of long-term planning and science policy, relations with other international organizations and with Member States.

2. The scheme takes into account the volume of work of the IOC Secretariat and of Unesco's Office of Oceanography.

3. It does not call for any extra staff in comparison with the staff table contained in 16 C/5 (1971-1972).

4. All the Director-General of Unesco has to do is raise the grade of one of the existing posts from P-4 to P-5. However, the Assistant Secretary for administrative and legal questions can start work immediately after the seventh session of IOC while still graded P-4, as his subordinate would be a P-3.

5. As far as Unesco is concerned, the head of the Secretariat (the Director of the Office) is responsible to the Director of Unesco's Department of Environmental Sciences, and as far as IOC is concerned, directly responsible to the Assistant Director-General of Unesco for Natural Sciences or if this is more acceptable directly responsible to the Director-General of Unesco and to the Chairman of IOC.

ANNEX IX

INTERNATIONAL CO-ORDINATION GROUP FOR THE CO-OPERATIVE INVESTIGATIONS OF THE CARIBBEAN AND ADJACENT REGIONS (CICAR)

Extraordinary Session
(Paris, 2 November 1971)

SUMMARY REPORT

The session was held in the afternoon, 2 November 1971, under the chairmanship of the International Co-ordinator, Rear-Admiral (ret.) W. Langeraar and in the presence of the Assistant Director-General of Unesco for Science, Professor A. Buzzati-Traverso. The representatives of the following CICAR countries were present: Brazil, Chile, Cuba, France, Mexico, Netherlands, United Kingdom, United States of America, USSR. The representatives of IOC/Unesco, FAO, WMO were also present, as well as observers from Argentina and Chile.

Item 1 - The site and the time of the 5th session of ICG for CICAR

The representative of Cuba, Ambassador of Cuba to Unesco, presented a statement pointing out that there was an opposition to the invitation of the Revolutionary Government of Cuba to site the next meeting of the ICG for CICAR in Havana, Cuba, and stating that this opposition leads Cuba to repeat its invitation.

The representative of the U. S. A. repeated the statement outlined in the first paragraph of Section 2 of Add. 1 to document SC/IOC-VII/21.

The representative of Brazil stated the preference of his government of having the 5th session of the ICG for CICAR in another site which would not raise political problems, as it happens with the place indicated in point 14 of the report of the 4th session (document SC/IOC/CG-8(IV)/12).

After the discussion on this matter, in which representatives of Mexico, U. K., Netherlands and USSR also took part, the group decided:

1. To accept kindly and cordially the invitation of Cuba, noting the absence of any other invitations as to the site of the next CICAR meeting, to hold the 5th session of ICG for CICAR in Havana, Cuba. This was agreed by the group. The U. S. A. and Brazil indicated that had there been a vote, they would have abstained.

2. To request the Secretary of the IOC, in view of the short time remaining before the date originally scheduled for the 5th CICAR session, to make, in conjunction with Unesco, early arrangements with the host government.

The representative of Brazil stated that since the extraordinary session accepted that proposed site, it will be impossible for his government to send a delegation to the 5th session.

Item 2 - Recommendation 4. 34 "Conduct of oceanographic expeditions in waters under the jurisdiction of coastal states" (document SC/IOC-VII/21, Annex III)

The attention of the group was brought to the U. S. A. comments on this matter contained in Addendum 2 to the document SC/IOC-VII/21 in which it is stated that the Recommendation 4. 34 does not conform with the Resolution VI-13 "Promoting fundamental scientific research". After the discussion it was decided to delete Recommendation 4. 34 from the text of the report of the 4th session of the ICG in view of the fact that the legal questions are not within the competence of the co-ordination group.

Item 3 - CICAR long-term prospects

The attention of the group was brought to the Addendum 2 to document SC/IOC-VII/21 in which the problem of establishment of a continuing committee for the CICAR area after the termination of the CICAR, as proposed by the International Co-ordinator, is outlined. The representative of the USSR expressed doubts of the necessity of such a committee and that in any case the countries participating in the CICAR must have the opportunity of being represented in such a committee. The representative of Mexico mentioned that they consider such committee unnecessary and that co-ordination should continue as it is now with participation of all Member States. The representative of Brazil expressed his view that after termination of CICAR it would be possible to think of a form of co-ordination when a group of countries take over. Finally the advantage of the extension of the closing date of CICAR was discussed, and it was agreed to postpone the closing of CICAR until 31 December 1973.

The Summary Report of the 4th session of the ICG for CICAR was adopted with the exception of Recommendation 4.34 of Annex III. It was decided to pass the report for the adoption by the session of IOC and the rapporteur was asked to draft a resolution for the 7th session of IOC.

ANNEX X

ABSTRACTS OF THE BRUNN MEMORIAL LECTURES

THE BIOLOGY OF THE INDIAN OCEAN

(G. F. Humphrey)

The biological characteristics of the Indian Ocean are greatly influenced by external factors. These are the geographical shape and extent of the Ocean, the meteorological patterns in the air above it and above the surrounding land, the physical and chemical oceanographic characteristics of the waters themselves, the geological structures which contain the Ocean and constitute its hinterland, and the extent and nature of the exploitation of the Ocean's resources.

The biology of any ocean is the qualitative and quantitative distribution of the biota, and the reaction of these biota, singly and in assemblages, on each other and on external factors. An integrated account of the biology is an account of distribution and an account of metabolism. Neither of these aspects is well known, let alone understood, for any ocean. In some respects the Indian Ocean stands above average, in others it sinks below.

Distribution can be studied by individuals - metabolism needs an integrated approach best fulfilled by national or international expeditions. The Lecture will deal very little with distribution of biota or with their exploitation. It will outline some of the processes which we are slowly coming to understand, and this largely as a result of the International Indian Ocean Expedition. These processes constitute specific topics in the field of marine productivity and will be considered under this latter heading.

RECENT METEOROLOGICAL RESULTS FROM THE INTERNATIONAL INDIAN OCEAN EXPEDITION

(C. S. Ramage)

The course of the meteorology programme of the International Indian Ocean Exped tion was largely controlled by the pattern of cruises selected by oceanographers and by vigorou. efforts to increase the supply of information provided by regular meteorological observing programmes.

A two-volume meteorological atlas uses monthly mean charts to describe the surface climate of the Indian Ocean during 1963 and 1964 and to describe the long-term upper-air climate of the Indian Ocean and its neighbouring continents. Useful mean fields of surface wind divergence and surface wind stress curl have been derived from an earlier atlas.

The atmospheric circulation over the Arabian Sea in summer is characterized by rising motion with unsettled weather in the east and south, and by sinking motion with fine weather in the west and north. Upper air data and numerical diagnosis confirm that the thermal-mechanical effect of the Himalayas and Tibet accounts for the distribution. Scattered sea-level measurements of radon concentration are consistent with this model.

Continuous recordings of sea-surface temperature and salinity made by METEOR off the west coast of India suggest that persistent coastal and valley winds combine to measureably affect the ocean surface layers.

Total solar radiation measured under clear skies is consistently less (except near the equator) than Budyko's estimates, apparently because of an ocean-continent difference in the amount of precipitable water in the air column. In the mean, cloudiness observed from the surface differs little from cloudiness observed from satellites; satellite data should be used in future ocean-surface heat exchange calculations. The present empirical equation (Sverdrup) for calculating

evaporation from the ocean surface appears satisfactory for winds < 6 m sec^{-1}, since it gives values about equal to the average of those determined from vertical profiles measured on a floating mast and those determined from airborne measurements of horizontal water vapour fluxes.

A REVIEW OF THE PHYSICAL RESULTS OF THE INTERNATIONAL INDIAN OCEAN EXPEDITION

(J. C. Swallow)

Much progress has been made in recent years in the study of specific aspects of the physical oceanography of the Indian Ocean, and of its general circulation, and many new observational techniques have become available since the time of the International Indian Ocean Expedition. These will be reviewed and an attempt will be made to assess their implications for planning future expeditions and monitoring systems.

GEOLOGICAL RESULTS OF THE INTERNATIONAL INDIAN OCEAN EXPEDITION

(G. B. Udintsev)

The International Indian Ocean Expedition was the second major international project to help the geological study of the Indian Ocean floor. The first was the International Geophysical Year, 1957-1959, which was the first time geological and geophysical investigations sufficiently modern in their methods and degree of integration were undertaken in the Indian Ocean. Before the International Indian Ocean Expedition (1959 to 1965), however, the geology of the Indian Ocean floor was very little known in comparison with the other oceans of the world.

The basic work was done by the expeditions of British, Soviet, American, French, West German and Japanese research vessels. These expeditions covered practically all the Ocean and carried out detailed surveys in a number of areas. Those surveyed in most detail were the Red Sea, the Gulf of Aden, the Persian Gulf and the Gulf of Oman, the Andaman Sea and the Java Trench. In the central parts of the ocean, particular attention was given to the Mid-Oceanic Ridge system, and in the southern part, a survey was made of the underwater margins of the Antarctic continent.

In accordance with modern requirements, the International Indian Ocean Expedition used a fairly wide range of methods including sonar studies of bottom configuration, continuous profiling of the sedimentary layer, deep seismic sounding of the earth's crust and the upper mantle, magnetometric and gravimetric observations, geothermic and seismological observations, sampling of the ocean floor sediments and bedrocks, photography of the ocean floor and sampling of suspended matter.

The results of the geological survey carried out by the Expedition have been discussed at several international conferences and symposia, and have appeared in a number of publications. Of these, mention must be made of the papers on the north-west part of the ocean, the Gulf of Aden and the Red Sea, published by the Royal Society in London; the papers on the hot springs of the Red Sea published in the United States of America; the oceanographic atlas published in West Germany; the Antarctic atlas published in the USSR, and several other articles from periodicals, published by Unesco in "International Indian Ocean Expedition - Collected Reprints".

The geological and geophysical results of the Expedition will, of course, be very fully treated in the special international geological and geophysical atlas of the Indian Ocean whose publication has been decided by the Intergovernmental Oceanographic Commission. This atlas includes relief maps of the ocean floor, charts showing the depth of the sedimentary layer and of the bedrock outcrops, the deep structure of the earth's crust and the upper mantle as revealed by seismic investigation, charts showing magnetic and gravitational fields, the heat flow from the earth's interior, seismicity, photographs of the ocean floor, charts showing types of sediment and their chemical composition, suspended matter, rates of sedimentation accumulation and the age of sediments.

Analysis of the geological and geophysical data collected by the International Indian Ocean Expedition will provide much new material for the development of the idea of a mobile lithosphere, plate tectonics, the expansion of the ocean floor, and the simultaneous oceanization of certain of the continental land masses.